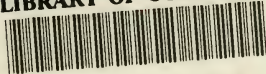




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ELEMENTS OF STRATEGY

BY

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ELEMENTS OF STRATEGY

CHAPTER I

STRATEGY

Offensive and Defensive War.—War is a contest waged between two belligerents for the purpose of determining questions at issue which cannot be settled by ordinary diplomatic means. The contest is usually directed by the chief executive power of a state acting as the supreme controller of the national armies and navies. During the progress of a great war all the powers of the nation should be centered in bringing the war to a speedy and successful termination by diplomacy, and by the utilization of the resources of the nation to raise its armed strength to a state commensurate with the task before it, and to maintain this state throughout the contest. The contest itself is carried on by the armed strength of the belligerents directed by the commanders of the land and sea forces.

A war is *offensive* on the part of the belligerent whose armed strength enables him to invade and maintain himself in his adversary's territory; it is *defensive* on the part of the one who is unable to protect himself from such invasion. When the belligerents are approximately equal in armed strength, the war may become alternately offensive and defensive, or it may be offensive in one part of the territory and defensive in another.

Objects of Offensive War.—The objects of an offensive war are to destroy the war strength of the defender and thus render him unable to prosecute the war; to conquer and occupy his territory so that no new force may be organized therein; to cause a change of sentiment in the authorities and the people of the nation attacked, so that they will desire peace on the invader's terms rather than a continuance of the struggle. The extent to which these objects must be carried out depends largely on the importance of the questions at issue. If these questions are not vital to the existence of the defender as an independent power, a simple exhibition of superior war strength as shown in a single successful battle may render the defender willing to accede to the demands of the invader; if, however, the questions are vital to the defender as an independent power, he may be unwilling to make peace until his armies are annihilated and his territory completely conquered.

The Austro-Prussian war of 1866 waged for the purpose of determining which of the belligerent states should be supreme in Germany was terminated shortly after the first decisive battle; the civil war in America and the British-Boer, in war which questions of independence were involved, were prosecuted until the lesser powers were absolutely exhausted.

Objects of Defensive War.—The objects of a purely defensive war are to neutralize the armed strength of the invader and thus render him incapable of prosecuting the war offensively; to cause a change of sentiment in the authorities and the people of the invading nation so that they will accept peace terms acceptable to the defender; and to enlist the sympathies of neutral nations and cause them to secure peace through active participation or through diplomatic influence.

To secure these objects, the war must be prolonged: the war strength of the defender preserved in a state of efficiency as long as possible; the invasion of the territory resisted vigorously; and the war-like spirit of the people so aroused that they will be willing to make any sacrifice rather than accept peace on the terms of the invader. A defensive war does not preclude offensive operations; in well-conducted defensive war, the invader is attacked whenever this can be done without compromising the armed strength upon which the nation must rely for a continuance of the struggle.

The decisive events of our Revolutionary war were the battle near *Saratoga*, October, 1777, and the siege of *Yorktown*, October, 1781, which resulted in the surrender of the armies of Burgoyne and Cornwallis; the treaty of 1778, by which the French nation agreed to assist the colonies with her land and naval forces; and the overthrow of the North ministry in Great Britain, resulting from a change of sentiment of the people and Parliament on the advisability of continuing the war. To secure their independence the colonies carried on active war from 1775 to 1781, and were obliged to be prepared for a renewal of hostilities until 1783.

Advantages and Disadvantages of Offensive and Defensive Wars.—The principal advantages of an offensive war are: the entire resources of the home territory, and of so much of the hostile territory as has been conquered, may be utilized to prosecute the war; the civil government, upon which dependence must be placed to raise the funds and supplies to prosecute the war, is in full operation; and the citizens of the country are subject to none of the hardships incident to invasion. The principal disadvantages are that its prosecution ordinarily requires a much larger army than that required for a defensive war, and

the army receives no assistance or reliable information from the inhabitants of the country in which it operates.

Though these advantages and defects are self-evident, the difficulties of invading a really hostile country are not generally appreciated. Besides supporting a field army superior to that of the defender, the entire country between the frontier and that army must be garrisoned by the invading troops to keep in check the hostile population and to protect the lines of communication by which the invading army receives its supplies. The greater the extent of this territory, the greater will be the force absorbed by these garrisons.

At the close of the Franco-German war, although the German army was obliged to garrison only the country between Paris and the frontier, *one-fourth* of the invading army was absorbed by these garrisons. In the summer of 1864, there were but two Union army groups in actual contact with the enemy; the eastern group commanded by Grant was composed of the Army of the Potomac and the Army of the James, and the western group commanded by Sherman was composed of the Army of the Cumberland, the Army of the Tennessee and the Army of the Ohio. The combined strength of the two groups was about 250,000 men. At this time, however, the available strength of the entire Union force under arms was about 500,000 men; *one-half* of the total force present for duty was simply guarding the conquered territory.

In Napoleon's invasion of Russia in 1812, of 400,000 men that composed his main army, 240,000 were left between the Vistula and Dnieper rivers to protect his communications, and only 160,000 passed Smolensk; of these 40,000 were left in the rear for the same purpose before the army reached Moscow. Nearly *three-fourths* of his army was protecting his communications.

The principal advantages of a defensive war are: a smaller force is required since the operations are in a friendly territory, in which the lines of communication require no special protection; the operations of the army receive assistance from the fortified places which delay and embarrass the movements of the invader; and the inhabitants assist the army as guides, spies, etc. Frederick the Great said:

“If glory were my only object, I would never make war except in my own country because of its manifold advantages; every man there acts as a spy; the enemy cannot stir a foot without being betrayed.”

Throughout the civil war, the Confederate force was much smaller than the Union force which it opposed. In the summer of 1864, it numbered only about 180,000 men, or a little more than *one-third* the strength of the Union armies, and yet was able to offer a substantial resistance.

The principal disadvantages of the defensive war are: the resources of the country not occupied by the invader can alone be counted on to prosecute the war; the civil government becomes more or less disorganized; and the citizens of the territory covered by the operations of the armies suffer the hardships incident to this occupation. These hardships have been much mitigated in modern times, but that they cannot be wholly eliminated from warfare, has been shown in the most recent wars.

Strategy.—Strategy in its most general sense may be defined to be the art of directing the employment of the armed strength of a nation to best secure the objects of war. It is not sufficient to create military force by raising, equipping, and training armies and navies, and constructing fortresses, but it is necessary to direct properly the employment of this force, lest it be dissipated in useless operations or destroyed in unnecessarily hazard-

ous ones. Strategy deals with the problems of warfare involving combinations of *force*, *space*, and *time*.

The elementary military forces are the *tactical units* of the three arms; the battalion, squadron and battery; the *strategic units* are combined units of combat, the division and the corps. Each unit has a definite numerical value represented by the strength present for duty, and a less determinate moral value due to its training, equipment, discipline, character of commander, amount of service, etc. The actual value of military forces can therefore never be accurately known; in ordinary problems of strategy it is usual to deal with their numerical value only.

The operations of war usually take place in an extended territory within which the units are moved and combined against the enemy like the pieces on a chess-board. The movements in war are, however, infinitely more complicated; the territory is covered by an irregular network of *highways*, *waterways*, and *railways*, along which all movements must take place; on highways, if transportation is not supplied, at a rate depending upon the physical condition of the troops, the character of the roads, and the weather; on waterways and railways according to the available supply of transportation. These routes are intersected by *rivers*, *marshes*, *mountains*, *forests*, etc., which still further complicate the movements. The operations are conducted against an enemy whose strength and position is, at any time, only approximately known under the most favorable conditions.

Time in warfare, as the number of moves in chess, limits the changes which can be made in the positions of the troops, and the new combinations which can be formed within a given time. An error in the estimation of the time in which a combination may be made may change probable success into certain failure.

For the above reasons, strategy has also been defined to be:

“The art of planning military operations upon the map.”—*Jomini*.

In its relation to tactics—

“Strategy fixes the point where, the time when, and the numerical force with which the battle is to be fought.”—*Clausewitz*.

Strategy is the intermediary between national policy which furnishes the means and determines the object of a war, and tactics, through whose decisive battles results are alone possible.

Definitions of Elements of the Strategic Territory.—

The *theater of war*, in its widest sense, is the entire territory which may become the field of operations of the belligerent forces; according to common usage it is that part of the theater of war in which the operations actually take place at any specified period. The term *seat of war* is also applied to this limited field. A *theater of operations* is the part of the theater of war covered by the operations of any independent fraction of the belligerent armies. A *zone of operations* is the territory which lies between two hostile armies. *The territorial base of operations* of an army is the entire territory from which it draws its recruits and supplies. *The linear base of operations* of an invading army is the line of obstacles or fortified places which limits the zone of ordinary counter attacks of the enemy. The term *base of operations* is applied to either the territorial or linear base.

The *front of operations*, or *strategic front*, is the line along which an army may be said to be deployed. It is the line connecting the leading divisions of the different columns of an army on the march, or their camps when at rest.

The *communications* are the routes along which an army is supplied. The *objective* of any military operation is the object which it is desired to accomplish; when this object is the possession of some definite position in the theater of war, it may be called a *territorial object*. *Lines of operations* are the highways, waterways, or railways along which an army moves or operates; the term is usually applied to the above routes connecting the objective with the linear base or the front of operations. A *line of retreat* is the line of operations followed by an army in making a retrograde movement; it is ordinarily the same as the line of communication. A *strategic point* is any position in the theater of war whose possession is of special value to the belligerents.

Theater of War.—The theater of war in its widest sense comprises the land territories of the belligerents, the high sea, the navigable waters of the belligerents, and may also include the territories of weak neutrals. It is not usually applied to such an extended territory, but is limited to the area in which the armed forces of the two belligerents have actually come into contact during the progress of the war. Thus the theater of the civil war in America is usually understood to mean the entire territory which at any period of the war was the scene of conflict between the Union and Confederate troops.

Theater of Operations.—The particular territories which are made the theaters of operations depend on the will of the belligerent who assumes the offensive. This is one of his principal advantages. If the nations have a common land frontier, the territory between the boundary and the capital usually forms the principal theater, as in the Franco-German war of 1870-71, the Austro-Prussian war of 1866, the Russo-Turkish war of 1877-78, etc.; if the territory of the defender is small and the pos-

session of the capital prize for which both belligerents are fighting, it may be the only territory thus included. If, however, the common boundary is an extended one, several distinct regions may be made theaters of operations. In the Russo-Turkish war of 1877-78, there was one region between the Black and Caspian seas, and another in the Balkan Peninsula west of the Black sea, covered by simultaneous operations; in the wars between Austria and France from 1792 to 1809, there was one theater of operations in Italy in the valley of the Po, and another in Germany in the valley of the Danube, in which distinct and independent operations were conducted.

If the territories of the belligerent states are accessible from the sea, the one with decisive sea-power may have considerable latitude in selecting the theaters of operations.

In the Mexican war, the first American army of invasion crossed the Rio Grande at Matamoras and advanced as far as Saltillo via Monterey. It was then decided to shift the main theater of operations and advance on the City of Mexico via Vera Cruz. This transfer was possible because Mexico had no navy.

In the Spanish-American war, the theaters of operations of the opposing armies were the colonial possessions of Spain: Cuba, Porto Rico and the Philippine Islands. The Spanish navy was unable to prevent the American forces from landing in her island possessions.

As each theater of operations should be the field of operations of a single commander, theaters should be limited by natural obstacles not easily traversed, or by unoccupied zones of such extent that there may be no confusion between armies occupying adjacent theaters. In our civil war, the theater of war covered by active operations was naturally divided into three theaters of operations: one between the Atlantic ocean and the Appala-

lachian mountain system, one between the Appalachian system and the Mississippi river, and one west of the Mississippi. This natural division was not always followed; in Virginia in 1861 there were two independent Union armies, and in 1862 as many as five. The operations of both years ended disastrously for the Union troops. In the territory between the Alleghanies and the Mississippi there was sometimes a single army, and sometimes two independent armies on the part of both the Union and the Confederate authorities. There was more reason for a division of this theater, since, until the fall of Vicksburg, these armies had two distinct lines of operation, one along the Tennessee and Mississippi rivers, and the other along the Nashville—Chattanooga railroad.

Territorial Base of Operations.—The territory which may be relied upon to furnish an army with recruits and supplies is that portion of the territory of each belligerent and his allies which is not occupied by hostile forces. A base, with a large population and rich in supplies, is essential to the maintenance of a prolonged war. Since the territorial base of the defender is gradually reduced as the front of operations of the invader is advanced, it is advantageous to have this territorial base of considerable extent so that it will require the occupation of an immense tract of country to injure materially the defender by reducing his resources in recruits and supplies. The great extent of the Russian base prevented the success of Napoleon's plan of invasion in 1812; he reached Moscow too weak in men and facilities for transportation to venture further.

Sea-power enables a belligerent to obtain supplies from distant colonies and from neutrals, and to restrict the supplies which his adversary can receive by sea. In the civil war, the blockade of the southern ports by the navy, and the occupation of the coast by Union troops

materially decreased the resources of the Confederate armies.

In the European war of 1914–1917, the territorial base of the central powers was too small to supply adequately the armies and the non-combatants; and the superior sea-power of Great Britain prevented the central powers from procuring supplies from the neutral nations of the Western hemisphere.

Linear Base of Operations.—The linear base of operations is usually a wide river, chain of mountains, or a line of fortresses, on or close to the frontier, which enables a small force to protect the country from invasion by raiding parties, while the field army is operating in the enemy's country. Natural lines of obstacles are usually strengthened by fortifications constructed in time of peace, or at the outbreak of war.

Before the construction of railways, when armies were obliged to rely upon ordinary wagon transportation for their supplies, it was necessary either to establish large depots of supplies along the linear base before beginning a campaign, or to live by requisitions on the country. The former was the custom of armies in the time of Frederick the Great, and the latter in the time of Napoleon. The method of subsisting by requisition was usually supplemented by depots. When Napoleon was about to enter upon his Russian campaign, he realized that his system of requisitions would fail as the theater of operations was an unproductive country, so he spent nearly an entire year in filling depots. His principal base was the Vistula river, where he established great depots at Danzig, Elbing, Thorn, and Modlin, and smaller ones at Marienburg, Marienwerder, Plock, and Warsaw; all these were fortified towns. As this base was in the country of a doubtful ally, he provided for contingencies by converting the

Oder and Elbe rivers into provisional bases, to which he could retire in case of disaster, by establishing depots at Stettin, Custrin, and Glogau on the former, and at Madgeburg on the latter. Behind the Elbe was the primary base of the Rhine.

During the wars waged between France and the powers of central Europe, the Rhine river was usually the linear base of one of the belligerent powers, and the possession of the fortified cities and bridges on this river was always one of the points contested in every war, and in every peace negotiation. The Potomac and the Ohio rivers formed the linear base of the Union armies east of the Mississippi river, and were early strengthened by the fortifications at Washington, Harpers Ferry, Covington, Louisville, Smithland, and Paducah, where the natural lines of invasion intersected these rivers. The Alps, separating Italy from the neighboring powers, would be the base of operations in a war in which Italy was involved; all the principal mountain passes are fortified by the states whose boundaries are formed by this range.

The linear base of operations is in the line along which the strategic concentration of the army usually takes place at the beginning of the war, and along which the army rallies in case of defeat in the enemy's territory.

If both belligerents have a seacoast frontier, the one with the greater sea-power may secure a base on its adversary's coast. In the Peninsular war, Great Britain formed a base on the peninsula between the Tagus river and the Atlantic ocean south of Torres Vedras, Portugal. In the civil war, bases were formed by the Union armies at several points on the Atlantic and Gulf coasts, as Port Royal, Hatteras, New Orleans, etc.; in the Spanish-American war bases were secured in Cuba, Porto Rico, and in the Philippine Islands. Bases on the enemy's seacoast must

ordinarily be well fortified in order to protect the supply of an army and its withdrawal, should it be unable to maintain itself in the enemy's country. Saloniki, the base of the allied armies in the Balkan States in 1916-1917, was thus fortified.

The principal linear base of the defender is not so distinctly marked as that of the invader; it may be roughly described as the line connecting the principal garrisoned and fortified cities in the rear of the army. Minor operations of defense may be based on any fortified place, or on any river whose crossings are in the possession of the defender, and which flows across, or in the vicinity of, the invader's lines of operations.

Extent of Base.—A base of considerable extent is more favorable to offensive strategic warfare than one of limited extent, since there will be more lines of operation leading from the base to the point in the enemy's territory which may be selected as a temporary objective. The invader has the choice of operating by one line, or by several lines of operation, simultaneously, and has a certain amount of latitude in the selection of his theater of operations, and his lines of supply. As he may utilize several lines of supply, he is thus less dependent upon any one of them than he would be upon a single line, and is in less danger of seeing his operations paralyzed by a sudden raid on his rear. He has also greater freedom in his forward movements, for if he finds his advance along one line checked by an impassable barrier, as an entrenched army or fortified place, he may shift his line of operations and turn the flank of the position without sacrificing the safety of his communications. Should he be defeated and pushed from his principal line of supply, he may always seek safety from utter destruction by retreating along one of the adjacent lines.

In the wars waged between France and Austria during the French Republic, Consulate and Empire, the linear base of the French operations was the Rhine river, north of the Swiss Alps, and the Alps from Switzerland to the Mediterranean sea. This extended base gave numerous lines of operations along which movements could be made into the enemy's territory. The most northern line of operations leading into the valley of the Danube crossed the Rhine river at the bridges of Cologne and Coblenz, the Main river between Frankfort and Bamberg, and reached the Danube in the vicinity of Ratisbon; this was the route followed by Jourdan in 1796. A second route crossed the Rhine between Mainz and Strassburg, the Neckar between Heilbrun and Stuttgart, and reached the Danube between Ulm and Donauwerth; this was the route followed by Moreau in 1796, and by Napoleon in 1805. A third route followed the valley of the upper Rhine from Basle, and crossed the divide between that river and the Danube near Lake Constance; this was the route followed by Moreau in 1800. Auxiliary routes also led through the Black Forest from Strassburg and from Freiburg to the head-waters of the Danube.

The valley of the Po in Italy could be reached from the north, by crossing the Alps via the Splugen, Saint Gothard, Simplon, and Great Saint Bernard passes; these were the routes followed by Napoleon and McDonald in 1800; the valley could be reached from the west by crossing the Alps at the Little Saint Bernard, Mt. Cenis, Genevre, and Argentine passes; the first of these was probably used by Hannibal in his invasion of Rome. These routes were not utilized as principal lines of operations in the campaigns of 1796-1800 because they were well defended by forts on the Italian side; as soon as they

fell into the hands of the French, however, they became lines of supply. From the south, the Po could be reached by the Corniche road, running eastward from Nice along the seacoast, thence through one or more of the passes through the Apennine mountains. This was the principal route followed by the armies of the first French Republic in their Italian campaigns; it was utilized by Napoleon in 1796.

If the base is an extended one, the defender cannot, at the outbreak of hostilities, be certain which of the various lines will be selected by the invader; he is therefore compelled to divide his force so as to protect each principal line of possible invasion; this enables the invader to fall upon one or more of these separated bodies with a united and overwhelming force.

In the winter of 1861-1862, the main base of the Union armies in the west was the Ohio river. Advanced posts were in central and eastern Kentucky. Being threatened all along the line, the Confederate army was deployed in groups along a wide front extending from Columbus on the Mississippi to Mill Springs on the upper Cumberland, via Fort Henry on the Tennessee, Fort Donelson on the Cumberland, and Bowling Green on the Louisville-Nashville railroad. This enabled Grant to pierce the line at Henry and Donelson before the Confederate army could be concentrated.

In the civil war the linear base of the Union armies operating in Virginia was the Potomac river from Williamsport to its mouth, and Chesapeake Bay from the mouth of the Potomac to Fort Monroe, Va. This extended base offered to the Union armies several routes into Virginia.

The Shenandoah route from Williamsport and Harpers Ferry was the line of operations of Patterson in 1861, of

Banks in 1862, and of Sigel, Hunter and Sheridan in 1864. The Orange-Alexandria railroad route was the line of operations of McDowell in 1861, of Pope in 1862, and of Meade in 1863. The route of the Fredericksburg-Richmond railroad was selected as a line of operations by Burnside in 1862 and by Hooker in 1863, although neither got beyond the Rappahannock river. The route up the peninsula between the York and James rivers was that utilized by McClellan in 1862. In 1864, Grant started by using the Orange-Alexandria railroad as his line of supply and then used in succession the Fredericksburg-Richmond railroad and the Rappahannock, York and James rivers as his campaign progressed.

An extended base on the part of the invader also offers some advantages to the defender. Being ordinarily weaker than his opponent the defender can hardly hope successfully to resist invasion by remaining directly on the invader's line of operations, if the latter concentrates his whole force. By operating along some parallel route, however, he may compel the invader to retreat by defeating the small fraction left on this route and by threatening the rear of the main column. The Confederate offensive operations in Virginia were usually made northward along the Shenandoah valley, while the Union armies were advancing southward east of the Blue Ridge mountains.

In May, 1862, McClellan had reached the eastern suburbs of Richmond and was awaiting the arrival of reinforcements overland from McDowell at Fredericksburg, before making the final assault. To prevent the reinforcement of McClellan and to destroy the Union forces operating in and around the Shenandoah valley, *Jackson*, with the consent of *Lee*, made an offensive movement in the valley. In this operation he defeated Milroy and

Schenck near the village of McDowell, west of Staunton, and drove them into the mountains of West Virginia; he then attacked and defeated Banks' forces at Front Royal and Winchester and drove him across the Potomac. This offensive movement had the effect desired by the Confederate commanders; McClellan received no reinforcements from McDowell as the latter was ordered to guard Washington and capture *Jackson*.

In 1863, after the battle of *Chancellorsville*, Hooker was encamped on the north bank of the Rappahannock river opposite Fredericksburg. *Lee* decided to compel him to withdraw from the State of Virginia by making an offensive movement across the Potomac river into the Union territory. He moved his army around the west flank of his adversary into the Shenandoah valley and thence into the Cumberland valley of Pennsylvania and Maryland. This compelled Hooker to make a retrograde movement, cross the Potomac river, and place himself between *Lee* and the cities of Baltimore and Washington, which the Union army was compelled to protect.

Secondary Bases.—Secondary bases or depots of supply are established by an army as it moves forward in an enemy's country, to form a connecting link between the main base and the field army. While the Ohio and the Potomac rivers constituted the main bases of the Union armies in the civil war, secondary bases were established at many points; some of the principal of these were City Point on the James river, Whitehouse on the Pamunkey, Nashville and Chattanooga on the Louisville-Atlanta railroad, Memphis, Vicksburg, and New Orleans, on the Mississippi river. When Napoleon moved from the Vistula on his Russian campaign, he established great depots on the main road to Moscow at Königsberg, Kovno on the Niemen, Wilna, Minsk and Smolensk. Between the great

depots, at a few days' interval, were smaller depots; thus between Smolensk and Moscow, separated from each other by a ten days' march, there were three intermediate depots. The network of railroads that now covers each of the important countries and the introduction of motor trucks makes the distance between depots greater than formerly. In expeditions by sea, the landing harbor is always a very important secondary base.

Communications.—Large bodies of troops moving slowly in a hostile country at a distance from their linear base can be subsisted only in the vicinity of railways and navigable rivers. The Count de Paris in his *History of the Civil War* deduces the conclusion that an American army of 100,000 men equipped with 4000 ordinary army wagons, utilizing three or four common country roads, cannot be subsisted in a barren country at a distance exceeding *twenty-five to thirty miles* from some point on a railway or navigable river. For a greater distance the ratio of the number of wagons to the number of miles is a rapidly increasing one. By the employment of motor trucks, the distance above given can be greatly increased, especially if the roads are good.

Railways are the lines of supply employed by modern armies, whenever practicable, because of their great carrying capacity. A railway freight car has from ten to fifteen times the capacity of the army wagon and travels as many miles in an hour as the army wagon travels in a day. The trunk lines which connect the hostile territories are the main arteries of supply, the branch lines which penetrate into every province of the base of operations are their feeders, the branch lines which radiate over the territory occupied by the army are their distributors. Whenever possible each army should have one or more distinct arteries with branch lines connecting the territory

occupied by its corps in time of peace with the army front.

Navigable rivers possess certain advantages over railways as arteries of supply; the carrying capacity of large steamers is much greater than that of trains, and the waterway, unlike the railway, is not liable to be rendered useless through accidents or through interference by an enemy's raiders. An enemy in possession of a bridge or tunnel for a few hours may wreck a railway so that it cannot be used for days or even weeks.

As communications are usually the lines along which the invader must retreat in case of defeat, movements in force against the communications of an invading army almost invariably lead to the retreat of the invading army to protect these lines. Unless the invader has anticipated such a movement by opening new communications, the secure possession by the defender of any point on these lines in rear of an invading army will lead to its surrender or to a disastrous retreat over unprepared lines. To secure the safety of his communications is usually the first thought of the commander of an invading army. Whenever there is any choice in the selection of the lines over which an army is supplied, *short lines are preferred to long ones, multiple lines to single ones, central lines to those in rear of the flanks of the army.*

In preparing the plan of the Virginia campaign of 1864, Grant, encamped about Culpeper Court House, Virginia, was compelled to weigh the advantages resulting from movements around the east and west flanks of his adversary, who was encamped along the south bank of the Rappahannock astride of the Orange & Alexandria railroad. A movement about the west flank would bring the Union army into the open country between the railway and the Blue Ridge mountains favorable for offensive and unfavorable

for defensive tactical operations; a movement about the east flank would bring the Union army into the tidewater region of Virginia, overgrown with thick woods and cut up by streams, unfavorable for offensive and favorable for defensive tactical operations. On the other hand, the former movement would prolong Grant's communications and expose them to the raiding operations both from the country along the Fredericksburg-Richmond railroad, and from the Shenandoah valley; the latter would allow him to utilize in succession, the Fredericksburg-Richmond railroad and the navigable rivers which penetrate deep into Virginia, as lines of supply, and make his communications short and absolutely safe. For the latter reason Grant decided to abandon the open country and plunge into the woods and swamps of eastern Virginia. The resulting campaign brought into prominence the advantages and defects of the theater of operations he selected. The enemy was able to make a stubborn defense, but was unable to check the advance movement by operations on the communications as he had done in the previous campaigns.

If the line of communications is a long one and is exposed to the enemy's raiding operations, the extent of the injury to which it may be subjected is much decreased by the construction of fortified depots at intervals along the line. Napoleon recommended that such depots should be constructed at the end of every five or six days' march in a hostile country. These fortified depots become the bases of operations of the forces detailed to protect the communications and to furnish the detachments assigned to the protection of railway bridges, tunnels, etc. If the communications are of great length, additional bases of operation are located on the flanks, distant from the communications, to intercept raiding parties before they

reach the lines. In the British-Boer war, the British constructed block-houses at short intervals all along the railroads to be protected, and connected them by barbed wire fences. The railroads were patrolled by armored trains.

Objective.—The destruction of the armed strength of an adversary is the primary objective of every war; therefore any separate body of troops from a patrol to an army may be the objective of a military operation. Any permanent or temporary fortified place which obstructs the movements of the invader or protects the operations of the defender, his troops, or supplies, and any military position favorable for the operations of either belligerent, as a river crossing, or mountain pass, may become an objective.

The importance of the objective will ordinarily determine the effort made for its capture. As the capture of the capital of a country is always an important indication to the world of the superiority of the invader, it is usually one of the principal objectives of a war. Its capture may not terminate the war, but if it can be held by the invader it is certain to have an important moral effect upon the defender's powers of resistance, for it will deter foreign governments from lending aid to a cause presumably desperate.

Lines of Operations.—At the outbreak of a war, any route which penetrates into the defender's country and along which an army can be moved and supplied is a possible line of operations. If an army moves as a unit along a single route it is said to have a *single line of operations*; if subdivided into two separate commands each having its own line of operations it is said to be operating on *double lines*; if subdivided into more than two separate commands it operates on *multiple lines*. An army sub-

divided into two or more separate commands may operate on *converging*, *parallel*, or *diverging lines*, depending upon the direction of the different lines of operations. Lines of operations are *interior* when they lie between the lines of operation of enemy; they are *exterior* when they are separated by those of the enemy. An army may also operate from any front of operations on lines as described above. Lines of operations are usually, but not necessarily, selected with a view to their use as lines of supply.

In Sherman's march from Atlanta to Savannah, Ga., in 1864, he abandoned and destroyed the railroad in his rear and subsisted his army on the country through which he passed. The movement was really a change of base from the Ohio river to the seacoast. In Grant's campaign in Virginia in 1864, his general line of operations was perpendicular to his lines of supply at their points of intersection.

A *single line of operations* does not mean a single road; it simply means that the different columns of the army are not separated by impassable obstacles or by such great distances as to render cooperation impossible. The distance between the roads is usually decreased as the position of the enemy is approached. In his campaign of 1805, Napoleon moved his army from the Rhine and Main rivers to the Danube, by utilizing every main highway between and including those of Strassburg-Stuttgart-Donauwerth, and Wurzburg-Ingolstadt, without violating the principle of employing but a single line of operations. The advantage of operating by a single line lies in the fact that the entire strength of the army is under the control of the commander on the day of the decisive battle.

An army which operates by *double or multiple lines* has its different columns so widely separated or separated by such impassable obstacles that they must, temporarily at

least, act independently. The advantage of operating by such lines is that the separate commands can be more easily marched and supplied than if united; the disadvantages are that the separate commands are liable to be attacked and defeated in detail by a united enemy.

Operations by double lines were undertaken by invading forces in two campaigns of the war 1914–1917.

In August, 1914, the Russian army under Rennencamp invaded East Prussia from the east while that of Samsanow invaded it from the south and southwest. The two armies were separated by the Masurian Lakes. By detaching a force to check the advance of Rennencamp and concentrating his remaining force to attack Samsanow, *Hindenberg* succeeded in destroying the army of the latter in the battle of *Tannenberg*. He then concentrated on Rennencamp and compelled him to retire to the protection of the Niemen river in Russia.

In the latter part of 1916, the armies of the central powers invaded Rumania on double lines. Mackensen moved northward into Rumania from Bulgaria while Falkenhayn moved southward into Rumania from Transylvania. The two armies were separated not only by Rumania but also by the Danube river. They were successful, however, in uniting their armies near the Rumanian capital, Bucharest.

Operations by triple lines were undertaken in the Austro-Prussian war, the British-Boer war and the Russo-Japanese war.

At the outbreak of the Austro-Prussian war of 1866, the Prussian army corps, which had been mobilized for some time, were concentrated along the Saxon-Bohemian frontier in three groups. The Third Army was near *Torgau*, the First near *Gorlitz*, the Second in Silesia near *Neisse* and *Glatz*. The mobilization and concentration of

the Austrian army had not been completed. To have concentrated the entire Prussian force at a single point of the frontier would have required considerable time and would have lost the advantage of its prompt mobilization. Moltke therefore decided to advance the three armies by different but converging lines and unite his armies in the enemy's territory.

The Third Army therefore moved up the left bank of the Elbe to Dresden, crossed the river above that city, and moved to the Isar river. The First Army reached the same stream by moving due south from Górlitz through the Bohemian mountains. The united armies then moved southeastwardly towards Königgratz on the Elbe, where they were joined by the Second Army which moved westward from Silesia. The Second Army joined the First and Third while they were engaged in the decisive battle of *Sadowa* or *Königgratz*. The battle was begun at 7 A. M., July 3; the Second Army reached the battlefield after noon, but in time to change a possible defeat into victory. This movement of the Prussian armies on different lines of operations facilitated the task of debouching from the mountain ranges which separate Prussia and Bohemia, and lightened the difficulties of camping, marching, and supplying the troops.

In the British-Boer war the sieges of *Ladysmith* and *Kimberley* by the Boers caused three divisions of the army corps sent under Buller to be landed at Durban, East London, and Capetown, instead of at Capetown as originally planned. This division of the forces led to the defeat of the Durban column at the *Tugela river*, the defeat of the East London column at *Stromburg*, and that of the Cape-town column at *Magersfontein* near the Modder river, all during the same week.

In the Russo-Japanese war the First Japanese army

moved on Liaoyang from Wiju on the Yalu river; the Second Army moved north along the railroad after landing at *Pitsewo*; the Fourth Army landed at *Takushan* and united with the Second at *Haitschon* south of Liaoyang. As in the Austro-Prussian war the two wings met only on the decisive battle-field at *Liaoyang*, and as in that war, victory hung in the balance for some time.

Armies may be said to be operating on *interior lines* whenever they can unite the separate groups into which the armies may be divided more quickly than their adversaries. This may be due to the fact that the lines of operation of the separate groups are nearer to each other, or are connected by better lines of communication than those of their adversary.

A classic example of successful operations conducted from a central position by interior lines against an enemy who was operating by double or triple lines, is the Italian campaign of Napoleon in 1796 in Italy in which he first drove the Austrian armies out of northern Italy and then held the Italian quadrilateral against four successive Austrian armies sent against him.

Lee made a successful campaign in 1862, by utilizing interior lines and a central position. In early August, 1862, the Union forces in the State of Virginia were divided into two armies, *McClellan's Army of the Potomac*, numbering 90,000 men, and *Pope's Army of Virginia*, numbering 60,000 men. The former was concentrated on the James river, near *Harrison's Landing*, where it had retreated after the seven days' battles at the end of June; and the latter was in northern Virginia, covering *Washington*, and operating on the line of the *Orange and Alexandria* railroad between the *Rappahannock* and *Rapidan* rivers. As the Army of Virginia had a large territory to occupy, its actual field strength was about 40,000 men.

The two armies were wholly separated from each other by *Lee's Army of Northern Virginia* which occupied Richmond, its intrenched capital, with about 70,000 men. The disposition of the Union armies was a very faulty one; neither alone was strong enough to attack the intrenched position of Richmond, and they were unable to cooperate in a joint movement.

After a long delay it was finally decided to withdraw McClellan's army from the James and unite it with that of Pope in northern Virginia. As soon as all danger from McClellan was removed by his withdrawal toward Fort Monroe, *Lee*, with 54,000 men, moved against Pope, defeated him in the battle of *Manassas*, and compelled him to retreat across the Potomac before he could be satisfactorily reinforced by McClellan.

In the war of 1914-1917, the Central Powers had the advantage of waging war from a central position against the Allied Powers whose forces were deployed on several disconnected fronts.

Lines of Retreat.—Lines of retreat may be as varied as the lines of operation. A single line of retreat is that ordinarily followed by a united army either from necessity, or because the army can thus be held together for future resistance. The difficulty of execution depends on the size of the army, the number and character of the roads, and the condition of the weather. Even Napoleon was unable to withdraw his army, under unfavorable conditions, from Moscow to his base on the Vistula.

Double or multiple lines favor rapid retreat of an army under one commander but separate the columns; if, however, they can afterwards be united by means of convergent routes, or by rapid transverse communications, as railways, this defect of multiple lines is neutralized. Two or more armies acting on different lines of operation may

retreat on convergent, or divergent lines. Convergent lines bring the columns nearer together so that they may operate as a unit and are favorable for the defense.

The allied British and French armies in their retreat from the frontier to the Marne in 1914 were following lines which were more or less convergent and brought the different armies into closer contact.

Divergent lines separate the several armies more and more, and are usually considered unfavorable for defense. The only circumstance in which they are considered advantageous is when an army has been so decisively defeated that no further hope of resistance can be entertained. Then the separate groups may scatter throughout the territory to become the nuclei of new armies, or to undertake guerrilla warfare.

The line of retreat is usually the most direct line to the linear base of the defeated army as the army wishes to reach a place of safety as soon as possible for the purpose of reorganizing. A retreat at right angles to this direction may at times be more effective than a direct retreat in stopping the advance of the invader. In 1758, Frederick the Great was besieging the Austrian fortress of Olmutz with his line of supply running to Troppau on the Bohemian-Silesian frontier. A large Prussian convoy having been captured on this road by the Austrian irregular cavalry, the king was compelled to raise the siege of Olmutz and retreat. Instead of retreating directly on Troppau, as the Austrians imagined he would be compelled to do, he retreated on Königgratz and then through the mountains. In this way he stole a march on his opponents, kept the field of operations in the enemy's country, and secured to himself a safe line of retreat. His opponent, *Daun*, who expected to attack the king on his retreat to Troppau and to follow him into Silesia, was

thus deceived and compelled to remain in Bohemia for its protection.

Strategic Points.—The strategic points in a theater of war owe their importance to their effect on the operations of the contending armies. Some points are strategic because they lie on the routes which the invader is obliged to follow, and are favorable for defense. Mountain passes, like those mentioned in the Alps and Apennine mountains, belong to this class. Some points are strategic because they lie on the routes which the invader must employ as lines of supply; such are the fortified or easily defended points on an important trunk railway, as Nashville, Chattanooga, and Atlanta, in our civil war. The army may mask them in passing, but it must capture them before it can open its lines of supply. Some points are strategic simply because they are occupied by a force which cannot be neglected; Plevna was such a point in the Russo-Turkish war. Its value was all due to the fact that it was occupied by a strong Turkish army which threatened the communications of the Russian army should it cross the Balkan mountains without first capturing Plevna.

There are political as well as military strategic points: the capital of a country is a political strategic point since its capture will probably have a material effect upon the national policy with respect to the war; if not upon that of the invaded country, at least upon the policy of its possible allies. The capital of a province is a political strategic point, as the administration of the province is directed from this center.

CHAPTER II

PREPARATION FOR WAR

Preparation for war includes the steps taken to create, maintain, and strengthen the military powers of a nation and to study the military systems of possible adversaries; to study the theater of war; to devise a plan of war; to mobilize the troops and to concentrate them on the frontier for offense and defense in accordance with this plan.

Necessity for Complete Preparation.—The wars which have been waged since our own civil war have shown very clearly the disadvantages and disasters which result from a lack of suitable preparation at the beginning of a war, and the short time which a nation is liable to have for a preparation after the outbreak of hostilities.

The Austro-Prussian war of 1866 had been pending for some time and both armies were preparing for the issue. The Prussian army was the first to finish mobilization, and profited by this advantage to attack her opponent before the latter was ready. The first actual declaration of hostilities was the notification sent to the Austrian outposts the day before the Prussian army crossed the frontier. The decisive battle of the war was fought at *Königgratz* ten days later.

The Franco-German war of 1870 was declared on July 19, 1870. On August 4, the German armies crossed the frontier before the French mobilization was finished; the two decisive battles of the war were *Gravelotte-St. Privat*, fought on August 18, and *Sedan*, fought on September 1. In the former the *Army of the Rhine* was defeated and

imprisoned in the fortress of Metz and in the latter the *Army of Chalons* was defeated and surrendered. These two armies constituted practically the entire regular trained force of France.

The Russo-Turkish war of 1877-78 was declared by Russia, April 24, 1877; she had, however, been preparing for it during the preceding six months by mobilizing along the Rumanian frontier all the troops she considered necessary for the invasion and the capture of the Turkish capital. The army began crossing the Danube on June 26 and the operations were progressing favorably when the decisive defeat at Plevna on the 30th of July brought the Russian advance to a standstill.

“All idea of carrying out the original plan of campaign with the troops actually in hand was out of the question. . . . The terrible error of underestimating the enemy and beginning war with an inadequate force was apparent to everyone and fully acknowledged.” *

The Russians were compelled to beg assistance of the Rumanians, to mobilize additional corps and divisions of a strength of 120,000 men, and to call out the first contingent of the militia to replace the losses suffered by the field army. Had the Turks been able to assume the offensive promptly after the repulse of the Russians at Plevna, the latter might have been compelled to recross the Danube.

When war was first declared between Great Britain and the Boer Republics, October 11, 1899, the British were unprepared for it; they had less than 20,000 regulars and a small body of volunteers in South Africa to guard their extensive territory. The Boers, on the contrary, were ready to take the field with 30,000 to 35,000 men. The Boers therefore assumed the offensive, crossed the

* Russo-Turkish War, by Lieutenant F. V. Greene, U. S. Army.

frontier on October 11 and 12, and the scattered British troops found it necessary either to abandon their frontier towns and retire toward the coast, or to protect them by subjecting themselves to investment in *Ladysmith*, *Kimberley*, and *Mafeking*. They chose the latter course. The first relief sent to the British force in South Africa was the army corps of three divisions which was mobilized for the war. It numbered about 40,000 men, and was commanded by Buller. When it reached South Africa in November, the necessity of relieving Ladysmith and Kimberley and defending the railways leading into Cape Colony led to a breaking up of this corps.

Four railway lines connect the Boer territory with harbors on the coast. On the east is the line from Durban via Ladysmith to Johannesburg and Pretoria. In the center are the lines running from East London and Port Elizabeth to Springfontein, and thence in a single line to Pretoria; the lines from Port Elizabeth and East London are separated by a distance of from 75 to 100 miles and are 240 miles west of the Durban line. The western line runs from Capetown to Kimberley and Mafeking; at its nearest point it is about 60 miles west of the Port Elizabeth line, and is connected with it by a transverse line. The distance from the coast to the frontier on the four lines is respectively 203, 311, 386, and 570 miles. From the frontier to Pretoria, the capital of the South African Republic, is 110 miles on the Ladysmith line, and 400 miles on the others.

It was manifestly impossible for a corps of 40,000 men to advance on the outer lines to relieve Ladysmith and Kimberley, and at the same time to guard the two interior ones and the lines of supply. In its effort to do so, there resulted the repulse of the eastern column December 15, in the first battle on the *Tugela*, south of Ladysmith, the

repulse of the central column December 10, at *Stormberg*, and the repulse of the western column December 11 at *Magersfontein* near the Modder river south of Kimberley. As in the Russo-Turkish war the operations were then brought to a standstill until further reinforcements could be brought from England. It was discovered that a force of at least 200,000 men would be required to prosecute the war properly.

The first successful offensive movement was made only about the middle of February, 1900, after the army had been reinforced by the 5th, 6th and 7th divisions and a large number of unassigned troops. On December 1, 1900, the original force of 20,000 men had been increased by reinforcements to 267,000, of whom 183,000 were regular troops.

Had the original force sent by our own country to the Philippine Islands in 1898 been one of trained regulars, the length and cost of that war would undoubtedly have been greatly decreased. The troops sent out were State volunteers whom it was necessary to replace in the midst of hostilities because their time of enlistment had expired. Even the national volunteers sent to replace them did not remain until the insurrection was completely subdued, but were in time replaced by regulars, when the regular army was increased.

The Military Forces.—In preparing for possible war, it would appear from the above that the most essential requisites for its rapid and successful prosecution are a just estimation of the power of the enemy, and the organization of a trained force of sufficient superiority to overcome that power.

Every nation can make a very accurate estimate of the military power of every other nation, if it creates a bureau of military intelligence, and this bureau performs its duties

thoroughly. Through its military attachés, the military journals, etc., this bureau should be able to tell very accurately the armed strength of any nation, the distribution of its troops, and their equipment and training. It is even possible sometimes from a study of the distribution of troops and the theater of war to foretell their probable concentration on the frontier at the outbreak of the war. This will appear in the plan of concentration prepared by Moltke before the outbreak of the Franco-German war which will be found in the next chapter.

It will not be in the power of every nation to carry out the second requisite, since the maximum force which can be created must bear a definite ratio to the population of the country. It is probable that the limit of strength of a standing army which a nation is able to support was reached by the great nations of Europe at the close of the nineteenth century; the armies of the five principal Continental powers numbered from 0.9 per cent to 1.3 per cent of their population. In time of war these armies could be increased to four or five times their peace strength by calling in all reserves. If the population of a country will not admit of her placing in the field as large a force as her adversary, or one sufficiently strong to make success possible, she may be able to increase her force by the aid of diplomacy. When Prussia felt that a war with Austria and her allies for supremacy in Germany was inevitable, she made an offensive and defensive alliance with Italy. This compelled Austria at the outbreak of the war of 1866 to place three of her army corps on the Italian frontier, and increased the probabilities of success of the Prussian armies. The offensive and defensive alliances of the great states of to-day must be considered in the military plans of their adversaries.

During the continuance of the war of 1914-1917, Ger-

many and Austria were reinforced by Turkey and Bulgaria, and Great Britain, Belgium, France, Russia and Serbia by Italy, Portugal and Rumania.

If the position of a state is such that she must exert her maximum effort at the outbreak of a war, she must adopt the Prussian system of recruiting by conscription and make her army a training school for recruits; in no other way can she give thorough military training to the greatest ratio of her male population. This conclusion has been accepted by most of the military powers which must depend either wholly or principally on their land forces for protection in time of war. The Prussian system has extended to Japan in the east, Turkey in the south, Portugal in the west and Norway and Sweden in the north. Under present conditions, the voluntary system of recruiting is practicable only in the countries that are protected from rapid invasion by sea-power.

Numbers alone, however, do not constitute the strength of armies, as the history of warfare has often shown. *Organization, training, equipment, morale, and leadership* are very important factors. If a nation is unable to raise an army numerically equal or superior to that of her adversary, it is on these factors she must rely for offensive success, and upon them in connection with fortification for her defense.

Organization and training together give an army mobility on the march, and cohesion on the battlefield. Without them, numbers may be really an element of weakness, since the difficulties of maneuver and supply increase in a more rapid ratio than the increase in numerical strength. Even under such a leader as Napoleon an army may become unmanageable. The heterogeneous army of half a million men with which he invaded Russia was greatly inferior to the army of *Austerlitz* and *Jena*, which had

only half its strength, but had been carefully organized and trained in camps of instruction. The Turks in the Russo-Turkish war, and the Boers in the South African war, were unable to undertake any decisive offensive movements on account of lack of organization and training. The former had to content themselves with the passive defense entirely, while the offensive operations of the latter were confined to the unsuccessful sieges of *Lady-smith*, *Kimberley*, and *Mafeking*, the unimportant invasion of the territory of Cape Colony along the frontier, and raiding operations. On the other hand, the well-organized and trained army of Frederick the Great was able to successfully assume the offensive against the combined armies of Austria, France and Russia, whose organizations were inferior to that of its own. To the superior tactical organization of the French armies was due much of their success in the early Napoleonic battles.

Better *equipment* for battle and for the march may also turn the scale in favor of an army which is superior to its opponent in these particulars. Military authorities attribute the success of the Prussians over the Austrians in the battle of *Königgratz* largely to the superiority of the breech-loading needle gun of the former over the muzzle-loading rifle of the latter. An army not thoroughly equipped for the march is tied to its lines of supply, which in these days are railways or rivers. Without a very perfect organization of their wagon trains, Grant and Sherman would have been unable to move so freely away from their lines of supply to turn the flanks of *Lee* and *Johnston* and Roberts would have been unable to turn the flank of the Boer position on the Modder river by moving away from the Kimberley railway towards Bloemfontein.

The *morale* at the outbreak of the war will be with the

army which feels itself better organized, trained, equipped, and led. Thereafter success will increase and defeat will decrease it.

Military history clearly shows the great effect of superior *leadership* in military operations. Without Washington, the American Revolution would certainly have failed; the morale of the Army of the Potomac was never higher nor its numerical strength greater than under McClellan, and yet he could not lead it to decisive success; *Lee* had but 62,000 men when Hooker had 125,000 men, and yet the lines of operation led towards Harrisburg, Pa., instead of Richmond, Va. The Union armies in 1862 and 1863 were as well organized as, and better equipped than the Confederates.

Had Napoleon's career been closed before the Russian campaign the military world might fairly have assumed that leadership alone is the decisive element in warfare. Since, however, Napoleon lost campaigns and battles, it is evident that leadership, although a very important factor, is not the only requisite for military success, and the other factors above mentioned cannot be neglected. The war of 1914-1917 has again demonstrated the fact that the value of a general for supreme command can be determined only by actual experience. No nation can therefore count on having a better leader than its adversary, if both are still untried; it may, however, lessen the danger resulting from the selection of a weak commander by maintaining an army, active and reserve, of a size sufficient to meet all requirements, and by giving the army the best possible organization, training, and equipment.

Map of the Theater of War.—The possible and probable operations of any war are largely influenced by the military geography of the theater of war, its boundaries, lines of communication, topographical features, fortresses,

political, commercial, and manufacturing centers. This becomes evident if we examine the details of any two campaigns which have had the same theater of operations.

When, in 1756, Frederick the Great began the Seven Years' war, he first sought to deal with the allied powers of Saxony and Austria. He invaded the hostile territory in four columns, the First from *Magdeburg*, via Leipzig to Pirna; the Second from *Torgau* to Dresden; the Third from *Gorlitz* via Reichenberg into Bohemia; the Fourth from *Glatz*, Silesia, through the mountains via Nachod. One hundred and ten years later the Prussians were again at war with Saxony and Austria. This time they crossed in three columns, following practically the routes of the Second, Third, and Fourth columns of Frederick the Great. In each campaign the object was to dispose of the Saxons first so that they would not interfere with the communications of the army. The operations of the Saxon army in its retreat differed in the two campaigns, which led to a divergence in the succeeding operations. In the century that intervened between the wars there had been vast changes in the organization, equipment, tactics, and strength of armies, and railways had replaced highways as the principal routes of travel. The configuration and topography of the boundary, however, remained unchanged; the same range of mountains, with the same passes, separated the territories of Prussia from Saxony and Austria and led to similar offensive operations, under a strategist superior probably to Frederick the Great.

According to Jomini, strategy is the art of planning military operations upon the map; an accurate map is therefore essential to the proper study and execution of all military movements in an extended territory. General Sherman wrote in 1844,

“Every day I feel more and more the need of an atlas, as a knowledge of geography in its minutest details is essential to a true military education. I wish you would therefore get me the best geography and atlas extant.”

The value of maps for military operations has been so universally appreciated, that the duty of map making has always been associated with the military profession. To-day the execution of the topographical surveys and the construction of maps is under the supervision of the military authorities of every country except our own. It is one of the duties either of the general staff, or of the engineers. The present military map of France was conceived by Napoleon, that of Germany by Moltke.

In every country officers are constantly exercised in the reading of military maps of their own and other countries. The standard military map of European powers is one which shows all topographical features of military value on a scale sufficiently large to be clearly shown, but on a scale small enough to allow the readers to get a comprehensive idea of a considerable territory. The scales of these maps vary between $1/63,360$ and $1/126,000$; the former is that of the map of Great Britain and the latter that of Russia in Europe. The smaller the area of the country to be shown the larger may be the scale.

The information delineated on a modern military map is so great that a very careful study of its topographical signs is necessary before an officer can read one quickly. On some of them twelve characters are employed to indicate the various kinds of bridges, ferries, and fords over rivers; nine to indicate varieties of roads and trails; and twenty-three to indicate the details of villages, etc. The map indicates the gauge and number of tracks of a railway, its embankments and excavations, its tunnels and bridges, and the grade at which it is intersected by the

highways and railways of the country. Elevations are ordinarily indicated by contours except in very mountainous countries, where the system of hachures is employed. Colors are employed to emphasize the rivers, woods, contours, etc.

The only map in our country which approximates to these is the map of the Geological Survey, which has been only partially completed. Two scales are employed; the more detailed is on a scale of 1/62,500, and the other 1/125,000. Upon the former fifteen minutes of latitude and fifteen minutes of longitude are shown on each sheet, upon the latter thirty minutes in each direction.

Maps on a larger scale than the standard are prepared of the surroundings of fortifications and other strategic points of the theater of war, and also for military maneuvers. Maps on a smaller scale are employed when it is desired only to show some special feature, as the railways, distribution of troops, etc.

Boundary.—The common boundary line of two countries cannot be ignored in considering probable military operations, as it is the general line along which the armies of the belligerents make their preliminary concentrations. The most striking of the boundary lines of the states of Europe is the great bastion line which separates the German and Austro-Hungarian empires from that of Russia.

An examination of a map of Russia will show that Poland, with the exception of the small province of Suvalki, lies wholly within a line connecting the salients of the bastion of East Prussia of Germany and Galicia of Austria. The area of the territory thus enclosed is about 43,000 square miles, or nearly that of the State of Pennsylvania; and its general shape is a square. A little to the east of the center is *Warsaw*, the capital of Poland, the third city of the empire, with a population of 750,000.

In its rear is the great Pinsk marsh with few lines of communication. The peculiar shape of the frontier and the importance of the outlying province of Poland will make the defense and attack of that province the first operation of any war between Russia and the allied powers on her west.

Against a combined movement of the allied powers Russia would almost be compelled to concentrate her forces in three groups or armies; one in Poland about Warsaw, and two in echelon in rear of its flanks and protecting its communications. The northern army would occupy the provinces of Kovno and Wilna in front of the Prussian bastion; the southern, the provinces of Volhynia and Podolia in front of the Austrian bastion. Were the war with either power alone, she might reduce the force in front of the other bastion. The central Russian army could not advance westward until its flanks were made secure by the occupation of East Prussia and Galicia to the Vistula river. Since the possession of the territory about Warsaw will naturally be the objective of the first campaign against Russia, and as it lies close to the frontier, Russia is obliged to keep a large force in garrison there, as she cannot rely on transporting to that point the accessory force to hold it after the outbreak of war. The shape of the frontier gives the allied powers the choice of numerous lines of operations all leading to Warsaw, and makes it difficult for the Russians to determine in advance from which point to expect the principal attack.

In the campaigns of 1914, Russia sought to advance simultaneously through East Prussia and through Galicia. The invasion of East Prussia was defeated by the battle of *Tannenberg*, but the invasion of Galicia was successful and the Russians advanced almost to Cracow and held the crests of the Carpathian mountains. Twice the Germans

attempted to force their center at Warsaw but were unsuccessful.

In the campaigns of 1915, the Austro-German armies penetrated the Russian line along the Dunajec river east of Cracow, Galicia, and compelled the Russian armies to evacuate nearly the whole of Galicia. This was followed by a thrust from East Prussia which penetrated the Russian line along the Niemen and Narew rivers and compelled the Russians to evacuate Warsaw and the line of the Vistula river.

Lines of Communication.—In modern warfare, the railways are the all-important lines of communication. By means of them the tactical units are united into combined units and transported to the frontier; the supplies are collected from all over the territorial base and shipped to the strategic front; the reinforcements required to replace the losses made by actual service are transported to the front, and the wounded, invalids, and prisoners brought to the rear; and large bodies of troops are occasionally transported from one point of the theater of war to another, to carry into effect some strategic plan.

Railways perpendicular to the frontier in front of an army are the natural lines of invasion, those in rear are the lines of supply; the connecting lines are the lines of concentration and maneuver.

Railways first began to assume an important position in the conduct of military operations during our civil war. In this war the armies could not be supplied by ordinary wagon transportation because the theater of war was one of great extent, and the highways therein were only common earthen roads, many of them practically impassable in winter, and difficult at all seasons after prolonged rains. The railways throughout the North which brought the supplies to the Potomac river in the east, and to Nash-

ville in the west, were operated wholly by civil corporations; but the lines extending from these points into the enemy's country were operated by the military authorities under the supervision of a general officer appointed Director and General Manager of the Military Railroads of the United States. During the year 1864, 280 miles in the east and 819 miles in the west were thus operated. During the month of June, 1864, 6650 men were employed in the operation and construction of railways in the division of the Mississippi alone.

Sherman testifies to his dependence on railway transportation in his Memoirs as follows:

“The Atlanta campaign would simply have been impossible without the use of the following railroads: from Louisville to Nashville, 185 miles; from Nashville to Chattanooga, 151 miles; from Chattanooga to Atlanta, 137 miles. . . . This single stem of railroad 473 miles long supplied an army of 100,000 men and 35,000 animals for the period of 196 days, viz., from May 1 to November 12, 1864. To have delivered regularly that amount of food and forage would have required 36,800 wagons of six mules each, allowing each wagon to have hauled two tons twenty miles each day, a simple impossibility on roads such as existed in that region of country.”

During the civil war the railways were employed almost wholly in bringing up reinforcements and supplies from the territorial base to the front of operations, and in carrying to the rear the sick and wounded of the army and the prisoners captured from the enemy. On two occasions, however, they were employed strategically to transfer army corps from one theater of operations to another. In the fall of 1863, after the battle of *Chickamauga*, Rosecrans found himself invested in Chattanooga by the Confederate army under *Bragg*, and was obliged to call for assistance. In this emergency, Hooker was sent with the

XI and XII corps of the Army of the Potomac, 23,000 men, from Virginia to Chattanooga, a distance of eleven hundred and ninety-two miles. This movement was made in seven days. In January, 1865, after the battle of Nashville, Schofield's corps of 15,000 men, en route for North Carolina, was transported from the valley of the Tennessee by water and rail to Washington, in eleven days.

The great utility of the railways in the civil war attracted the attention of the military authorities in Europe, and particularly of Moltke, chief of staff of the Prussian army. He saw in them the means of gaining a decided strategic advantage by placing the Prussian army on the frontier before any possible adversary, thus to overwhelm him before he was ready to meet the attack. After years of study and with the experience gained in the Austro-Prussian war of 1866 he was able to make the marvelous concentration of 1870 which has commanded the wonder and admiration of every military student. Between the 23d of July and the 9th of August 456,000 officers and men, 135,000 horses and 14,000 guns and other carriages were transported from the different provinces of the North German Confederation to and beyond the Rhine river, and in such a thorough state of preparation that hostilities were begun by invading the enemy's territory even before the last contingent had arrived. Only six trunk lines were employed in this movement, which required twelve hundred and five trains; most of the lines were only single-track roads.

The difficulties involved in perfecting a plan for this movement become even more evident, when it is remembered that at the outbreak of the Franco-German war, the railways of North Germany numbered ninety-five independent lines controlled by eighteen independent states

and forty-five private corporations. Without wholly stopping their civil business, it was necessary to unite them in a plan by which nearly half a million of men, with supplies, should be transported without unnecessary fatigue or privation, from every railway station of the North German Confederation to the French frontier. It is self-evident that such a plan required not only the most thorough study of the maps and resources of every road, but also the most hearty co-operation of the military and railway authorities. As in the civil war, the railways captured from the enemy were operated by the military authorities and served to supply the army in its campaign in France. The reinforcements afterwards sent to this army to replace losses, etc., numbered 244,000 officers and men; 22,000 horses, and 116 field guns. The prisoners sent to rear numbered 384,000 and the sick and wounded 240,000.

Since the Franco-German war the military authorities of every European country have devoted much time to the study of the railway transportation problem in war. Military railways have been constructed to supplement the civil lines where these do not suffice for the prompt movement of troops. The German problem is much simpler than it was in 1870. Sixteen through lines connect the German territory with the Rhine and cross that stream on iron bridges. Double-track railways follow both banks of the stream. Eight lines penetrate Lorraine and are united into five lines at the frontier. Seven lines lead from the Rhine to the Vosges mountains in the province of Alsace. Practically all the railways are owned and operated by the state. In 1870 France found her lines defective from the fact that they all passed through Paris; now she has practically an independent through line from each army corps district to the frontier.

In August, 1914, both France and Germany in three weeks mobilized and moved to the French-Belgian-German frontier nearly three times as many men as Germany did in 1870.

Besides the study of the railways of the home territory for the purpose of transport, it is also essential that they be studied with a view to prevent invasion. This involves questions of military engineering as well as strategy. Certain points on the line must be fortified so that they may be held to the last extremity; others, such as bridges and tunnels, must be selected for rapid demolition.

In the study of the railway system of the possible theater of operations in the enemy's territory, the same general problems arise. It is necessary first to study their probable effect on the time and manner in which the enemy will concentrate his armies on the frontier, for it is essential if possible to forestall him in this movement; second to study his lines with a view of determining the manner in which he will render them useless should he find himself unable to resist invasion, and the best manner of restoring them as soon as possible. It is said that before the Franco-German war a Prussian engineer officer in disguise surveyed the route for the railway constructed by the Germans in 1870 from Remilly to Pont-à-Mousson on the Moselle, to carry their railway communications around the fortress to Metz.

Highways.—While railways are the important lines of concentration and supply, the ordinary highways of the field of operations must remain the actual marching routes of an army. Once in the vicinity of the enemy, the troops must be ever ready for attack and defense; they must therefore move in a deployed formation on the roads of the country. As the different corps and divisions must if possible move on separate roads, a careful study of the

road map is essential to determine the route which is to be followed by each, so that the different columns may be within the necessary supporting distance of each other and yet not cross each other's routes. The arrangements made by Napoleon for the march of his army in 1805 from Paris and Boulogne to the Rhine and thence to the Danube, is an excellent study for planning such marches.

A detailed examination of the terrain in the vicinity of the roads is essential when in the vicinity of the enemy, for the army has reached a zone in which every minor topographical feature of the ground, hill, valley, stream, woods, embankment and excavation, is liable to play an important part in the further operations. All these details may not appear on the general map upon which the operations are planned, but must be developed by reconnoissances. One of the difficulties with which all the generals in our civil war had to contend was the want of good road maps; the Confederate generals went astray even within a few miles of their own capital.

Natural Topographic Features.—The natural topographic features of a theater of war which have the greatest effect on military operations are its rivers and mountains. Both sometimes facilitate and sometimes obstruct military movements. Any great river which penetrates the defender's country may be employed as a line of invasion, or a line of supply, and secondary bases may be established on its banks. In our civil war, the *Mississippi*, the *Tennessee*, the *Cumberland*, the *York*, and the *James* rivers were all thus employed and contributed largely to the success of the Union military operations. Any great river valley which has the general direction in which the army desires to move will be utilized as a line of operations since in it will be found the best railways and roads for the supply or movement of the army and the most

fertile regions for its support. The east and west military invasions of Europe have followed the *Danube* or *Po* to Vienna, the tributaries of the *Seine* which center near Paris, to that capital, the route of the *Main* or *Lahn* and *Saale* to Berlin.

The rivers which flow parallel to the frontier are employed as linear bases or lines of defense. In our civil war, the Potomac river formed part of the linear base of the Union armies in the east, and their advance on Richmond was opposed at Bull Run creek by the Confederate forces under *Beauregard* and *Johnston*; at the Rappahannock, the Rapidan, and the North Anna by the army under *Lee*. The Boer forces stopped the first British relief corps on the *Modder* and the *Tugela* rivers. The minor rivers and streams of a country are the lines along which an army frequently deploys for battle. The insignificant Nebel creek marked the line of development at the decisive battle of *Blenheim*: the Goldbach, that at *Austerlitz*; the Mance, that of *Gravelotte*; Antietam Creek, that of *Antietam*. The important points on an unfordable river are the permanent bridges, the possession of which gives access to, and the control of both banks; second only to these in importance are positions which are favorable for the construction and defense of military bridges.

Ranges of mountains which are parallel to the frontier and intersect the lines of operation of an invading army may, like rivers, be utilized either as linear bases or lines of defense. As high mountain ranges can be passed by armies only at the passes, which are usually widely separated, the defense of mountain ranges is less difficult than that of rivers. Mountain ranges which are parallel to the lines of operation afford a support to one of the flanks of a marching army and if the passes are guarded the move-

ment may be concealed from an enemy who is beyond them.

In 1862 *Jackson* employed the Bull Run mountains as a protection for his right flank and as a screen for his movements, when he marched from his position in front of Pope on the Rappahannock river, north to the Manassas Gap railroad and thence through Thoroughfare Gap, and captured the Union line of supply near Manassas Junction. Numerous illustrations of the effect of rivers and mountains upon military operations will be met by the student of military campaigns.

Great forests, marshes, and deserts in a theater of war also limit the possible military movements by interposing obstacles to free combination of the different columns of a command. Forests and marshes can be traversed only along defiles, and deserts by small columns.

“In a country like Holland where at every step one finds advantageous and impregnable positions, the defensive can be advantageously sustained with inferior troops because everywhere protection may be secured through the employment of unfordable canals, marshes, and inundations.”—*Napoleon*.

Location of Fortresses, Depots, Manufacturing Centers, etc.—Before a campaign is begun it is essential to know as accurately as possible the position and strength of every permanent fortress which is liable to be encountered, so that in the plan of campaign provision may be made for its reduction, or its masking by a corps of observation. An idea of the task involved in the reduction of a fortification in the Franco-German war may be obtained from the statement that in the reduction of the old fortress of Strassburg in 1870, the weight of the shot fired was about *three times* that of the shot fired by the entire field artillery in the war. The entire weight of the

artillery material used in that siege was about 4000 tons. It is essential to know also the location of the depots and manufactories of arms and munitions of war of all kinds, so that if possible they may be captured and destroyed, and thus diminish the resources of the enemy to carry on the struggle.

CHAPTER III

MOBILIZATION

Mobilization is the transformation of the military establishment from its status of peace to that of war. It comprises the formation of the *field army* recruited to full strength, armed, equipped, and provided with transportation for field service; the formation of *reserves* to reinforce it; the formation of *depots* of recruits to replace its losses; the formation of *garrison troops* to occupy the stations vacated by it; and the organization of all the auxiliary service necessary to maintain the combatant part of the force in a high state of efficiency.

In order that the mobilization may be effected without unnecessary loss of time, a plan of mobilization must be prepared in advance. This plan indicates the strength and organization of the field army, depot, reserve, and garrison troops; the order and manner in which each is to be recruited, clothed, equipped, and armed; the method by which horses and transportation are to be provided for the mobilized troops; and the use which is to be made of the railways during the period of mobilization.

The mobilization of one of the great Continental armies means the incorporation into the military establishment of a large percentage of the male population; or in the words of Goltz, it means the "Nation in Arms." To accomplish this without confusion or delay, the plan must be so devised that the duties of every citizen concerned in the mobilization, whether in the active army, its reserves, its railway or its civil service, are laid down with

great precision and clearness. This is the aim of the scheme of mobilization originated in the Prussian service, and since copied in its essential details by all services based on the system of recruiting by universal conscription.

Prussian System.—The general plan of mobilization is drawn up and corrected annually by the general staff, and is based on the principle of decentralization; each corps, division, brigade, and regiment must complete its own mobilization. Each army corps commander has personal charge of the mobilization of his corps, and is assisted by the highest civil authorities in his territorial department. To localize his work the country is divided into as many territorial departments as there are corps less one; each corps except the guard corps is recruited from its own department; the guard is recruited from the entire Kingdom of Prussia.

Each corps commander being informed of the required strength of field corps, depot, reserve, and garrison troops upon a war footing prepares a scheme for their mobilization, based upon the needs of his corps, the resources of his department; and the instructions given him of the use which he may make of the railways. This scheme is based upon the mobilization in order, of the active army, depot troops, reserves, and garrison troops. It indicates the particular branch to which every officer is to be detailed, and the particular branch to which every annual class of the active army, reserves, and landwehr is to be assigned. As a rule the youngest men who have completed a full term of service are assigned to the field army, the next classes to the reserves, and the oldest to the garrison troops. Depot troops are formed of the partially trained recruits and young men of the ersatz reserve. The officers in charge of divisions, brigades, and regiments of

infantry, of brigades of artillery, of battalions of rifles and train, of the corps of engineers, of the corps of intendance, of artillery depots, etc., are required to prepare plans of mobilization of their respective units and branches.

Each territorial department is as a rule divided into *four* brigade districts, and these are subdivided into *four* landwehr battalion districts of *two* landwehr company districts each. The commander of a landwehr battalion district is an officer on the retired list whose duty it is to keep full and accurate lists of the men in his district who are of furlough from the regular army, or belong to the reserves or landwehr. The annual class, place of residence, and organization in which he served, are inserted after the name of each man of the standing army, reserve, and landwehr, and the service for which he is specially fitted by trade or occupation after the name of each man in the ersatz reserve. To assist in preparing these lists the commander is allowed a small staff. It is his duty also to notify the individual men when the order for mobilization is issued and inform them when and where to report.

In order that this notification can be given in the shortest possible time, he must plan the routes to be followed by the orderlies and others in summoning the men; he must also plan the routes to be followed by the men in reaching the rendezvous fixed in advance, where they are to be received by officers and noncommissioned officers of the active army, reserves, and landwehr, sent to receive them. In notifying the men, the landwehr district commander is assisted by the civil authorities. The responsibility of the district commander ceases when the men have been received at the general rendezvous of the district. In marching to the rendezvous the men are usually collected in small squads, and led by a squad leader appointed by the district commander.

Upon the arrival of the men at their regimental headquarters, they are clothed, equipped and armed from the regimental stores collected for the purpose in time of peace, and are then as far as possible assigned to the companies in which they served their tour of active duty.

While the field army is being thus mobilized, its depot troops are being formed. The mobilization of the reserve and garrison troops takes place immediately after that of the field army. In order that the mobilization may take place without confusion, the first day of mobilization in each army corps district is fixed by telegram from the war ministry. Each officer concerned in the operation must prepare in time of peace a journal giving in order his proposed actions on each day of the mobilization period, and these journals, after approval by his superiors, must be strictly followed.

To secure the necessary horses, the country is divided into horse districts. In each district the horses are annually examined and their value appraised. At the outbreak of war, every owner of a horse must present it at a certain rendezvous for inspection and possible acceptance by the government at the price fixed.

Mobilization of the German Army in 1870.—At the opening of the Franco-German war, the army of the North German Confederation numbered about 304,000 men. The plan of mobilization called for a field army of 578,000 men, 159,000 horses, and 1284 guns; a depot force of 194,000 men, 23,000 horses, and 246 guns; a reserve garrison force of 209,000 men, 17,000 horses, and 162 field guns. The order for mobilization was telegraphed from Berlin on the night of July 15, and the 16th, three days before the declaration of war, was appointed for the first day of mobilization.

On the *first* and *second days* the calls were issued for the

reserves, men on furlough, and the owners of horses, and the regiments began sending details to bring back their quotas. In the infantry, on the *third day* arms and ammunition were drawn from the artillery depots, and carriages and harness were made ready for the horses. On the *fourth day* the horses arrived, and the infantry field trains were organized. On the *fifth day* the men on furlough returned and were equipped. On the *sixth* and *seventh days* the reserves appeared and were armed, clothed and equipped; each man had been allowed twenty-four hours' delay to arrange his affairs. On the *eighth day* the regiment was reported ready for field service. Cavalry and field artillery required a day or two longer than infantry, and the organization of the siege, engineer and general supply trains, a few days more than the mounted services. However, by the evening of the *eighth day*, the mobilization of the field army was so nearly complete that its transportation to the front was begun the next day, July 24.

While the field army was being mobilized, the depot troops were being formed. Each infantry regiment formed a depot battalion, each cavalry regiment a depot squadron, and each regiment of artillery a depot battalion; the other services also organized their depot units. The depot troops were, as a rule, composed of partially instructed recruits and ersatz reserve men. The reserve and garrison troops were formed of the extra reserve and landwehr men; the youngest classes were assigned to reserve battalions, and the oldest to the garrison troops. The number of extra men of the reserve and first contingent of the landwehr furnished about two battalions of reserve troops for every regiment of the field army.

Raising the Army for the Spanish-American War.—The operation of preparing the United States army for

war is a far more difficult task, as is illustrated by the Spanish-American war. The regular army of the United States at the outbreak of the war numbered 28,183, and was practically recruited to its authorized strength. It could not be increased without an act of Congress. This act was passed on April 26, five days *after* the outbreak of the war, and the authorized war strength of the regular army was fixed at about 60,000 men. In round numbers, this increase was effected by voluntary enlistment to 44,000 May 31, 52,000 June 30, 56,000 July 31, 58,000 August 31. The principal engagements of the regular army during the war, which were those of *San Juan* and *Caney*, at *Santiago*, Cuba, were fought July 1 by the regiments *before* they had been recruited to war strength.

The line troops of the volunteer army were furnished by the governors of the different States; the staff by direct presidential appointment. The first call was issued April 23, two days after the declaration of war, and was for 125,000 men. The telegrams to the governors stated that—

“The regiments of the National Guard or state militia shall be used, as far as their numbers will permit, for the reason that they are armed, equipped and drilled.”

A second call was issued May 25 for 75,000 additional volunteers; Congress also authorized the raising of 10,000 infantry, 3000 cavalry, and 3000 engineers from the entire country. A total of 216,000 volunteer troops were authorized.

The mustering of the volunteers into the United States service took place as rapidly as possible in the different State rendezvous, but was not quite as rapid as was anticipated. At the end of May the volunteer army numbered 125,000, at end of June 160,000, at the end of July 212,000, and only at the end of August 216,000.

The equipment of the National Guard was found to be very incomplete, in fact these organizations were obliged to depend almost wholly upon the United States authorities for clothing, camp, and garrison equipage. As there were no accumulated depots of supplies for this purpose, the equipments were manufactured after the outbreak of the war. The equipment of the volunteer army required many months and we find that "even as late as October, troops in camp and in the field were lacking in some articles of clothing, camp, and garrison equipage."* When mustered in, the regiments of the National Guard were found to be either deficient in drill or wholly untrained, owing to the necessity of enlisting a large percentage of recruits to fill the organizations to the required strength.

As soon as possible the organizations were ordered into great camps of instruction similar to those established in the civil war where they were formed into brigades, divisions and corps, and instructed in their military duties. The I and III corps were at Camp Thomas, Chickamauga, and together had a maximum strength of 56,500 men. The II corps was at Camp Alger, Va., and had a maximum strength of 22,600 men. The IV corps was at Mobile, and had a maximum strength of 20,000 men. The V corps was concentrated at Tampa before it moved on to Santiago, Cuba; it was composed principally of Regulars and had a maximum strength of 18,500; the VI corps was never formed; the VII corps was at Tampa, Florida, and had a maximum strength of 27,800; the VIII corps was in the Philippines and had a maximum strength of 15,600 during the period given.

The assembling of large bodies of partially equipped

* Report of Commission appointed to investigate conduct of War Department in the war with Spain.

troops in a few camps greatly increased the difficulty of supplying and equipping them, but doubtless had some compensating advantages. At the close of the period considered, August 31, the volunteer regiments were as a rule clothed, equipped, drilled in company, battalion, and regimental maneuvers, and had learned many of the minor duties pertaining to a soldier's life. Only a portion of the higher units, brigades, divisions, and corps, were as well organized and equipped as were the similar organizations of the Army of the Potomac in the spring of 1862; that army had then been in camps of instruction at least six months.

The army corps of the Spanish-American war were usually deficient in cavalry, artillery and engineers. An idea of the difficulties which arise in thus creating an army, may be gathered from the fact that in the telegraph division of the Adjutant General's office, during July and August, twenty operators, five clerks and seven messengers were required. The Adjutant General's office had charge of the mustering in of the volunteer army in addition to its ordinary duties relating to the regular army.

Raising the Armies for the World War.—A state of war between the United States and the Imperial Government of Germany was declared April 6, 1917.

As in previous wars, the government found itself without the laws necessary to raise the forces that would be required for such a war, beyond the recruiting of the Regular Army and the National Guard to maximum strength as provided in the National Defense Act of June 3, 1916.

Profiting by the experiences of the Civil War and the Spanish War, after considerable discussion, Congress passed the Selective Service Act of May 18, 1917, introducing compulsory service. Some of the main features of this Act are as follows:

“That the enlisted men required to raise and maintain the organization of the Regular Army and to complete and maintain the organization embodying the members of the National Guard drafted into the service of the United States, at a maximum legal strength as by this Act provided, shall be raised by voluntary enlistment, or if and whenever the President decides that they cannot effectually be so raised and maintained then by selective draft; and all other forces hereby authorized . . . shall be raised and maintained by selective draft exclusively; but this provision shall not prevent the transfer to any force of training cadres from other forces. Such draft as herein provided shall be based upon liability to military service of all male citizens or male persons not alien enemies who have declared their intention to become citizens, between the ages of twenty-one and thirty years, both inclusive, and shall take place and be maintained under such regulations as the President may prescribe not inconsistent with terms of this Act. Quotas for the several States, Territories, and the District of Columbia or subdivisions thereof, shall be determined in proportion to the population thereof, and credit shall be given . . . for the number of men who were in the service of the United States as members of the National Guard on April first, or who have since that date entered the military service of the United States . . . as members of the Regular Army or the National Guard. . . . Organizations of the forces herein provided for, except the Regular Army . . . shall as far as the interests of the service permit, be composed of men who come, and of officers who are appointed from, the same State or locality.

“No bounty shall be paid to induce any person to enlist in the military service of the United States; and no person liable to military service shall hereafter be permitted or allowed to furnish a substitute for such service; nor shall any substitute be received, enlisted, or enrolled in the service of the United States; and no such person shall be permitted to escape such service or to be discharged therefrom prior to the expiration of his term of service by the payment of money or any other valuable thing whatsoever as consideration for his release from military service or liability thereto.”

Under this Act, the President directed all persons liable to draft and not already in the service to appear for enrollment before local boards appointed for the purpose on June 5, 1917. Between nine and ten million registered that day.

These were arranged in numerical order in over 4500 districts and on July 20, corresponding numbers were drawn from a bowl in Washington which determined the men who were to report to the selective service boards to determine their liability for service under a classification previously adopted.

A second registration took place June 5, 1918, of the men who had attained the age of 21 since the first registration.

A third registration September 12, 1918, extended the age limits to 18 and 45.

The following table gives the number of men registered and inducted into the service:

MEN REGISTERED AND INDUCTED

Registration	Age Limits	Registered	Inducted	Per Cent Inducted
First and second.	21 to 31	10,679,814	2,666,867	25
Third.	{ 18 to 20 32 to 45 }	13,228,762	120,157	1
Alaska, Hawaii, Porto Rico.	18 to 45	325,445	23,272	7
Total.	18 to 45	24,234,021	2,810,296	12

Under the system of recruiting adopted for this war, the men were furnished more rapidly than they could be accepted due to time necessary to prepare the training encampments and furnish the necessary equipments.

Eventually 32 divisional training camps were prepared in which most of the 42 divisions, that were sent abroad before the close of the war, were trained. Other divisions were being organized in the United States at that time.

Strategic Concentration.—After the field army is mobilized the next operation is the concentration of the field army on or near the frontier for offense or defense. This is an operation which requires the most careful preparation to avoid confusion, as it requires the utilization of the railway systems of the country to their utmost capacity, and usually takes place simultaneously with the last operations of the mobilization. In his "Franco-German War," Moltke says of the mobilization and concentration of the German army:

"The means of mobilizing the North German army had been reviewed year by year in view of any changes in the military and political situation, by the staff, in conjunction with the Minister of War. Every branch of administration throughout the country had been kept informed of all it ought to know of these matters. . . . it was decided that the best way of protecting south Germany would be by an incursion into Alsace across the central part of the Rhine, which could be made by assembling the main force at that point. . . . as soon as this was decided the other preparations were made. The orders for marching or traveling by rail or boat were worked out for each unit of the army, together with the most minute directions as to the different starting points, day and hour of departure, duration of journey, refreshment at stations, and place of destination. At the point of concentration, stores and magazines were established and thus when war was declared it needed only the royal signature to set the entire apparatus in motion with undisturbed precision."

Separation of Mobilization and Concentration.—If possible the mobilization should be fully completed before the

transport to the frontier begins; otherwise the units are liable to arrive on the frontier only partially recruited and equipped, and confusion is almost certain to exist on the railways due to the effort to carry on the two distinct operations simultaneously. Under exceptional circumstances, the order of the operations may be reversed as in our civil war. To preserve peace along the border and to protect the capital, which was in hostile territory, the Northern regiments were rushed to the frontier as soon as raised, and there organized into brigades, divisions, corps, and armies in camps of instruction. A similar system was also employed by the Confederates. This was practicable because both belligerents were wholly unprepared and were unable to begin active operations at the outbreak of the war; in a war with a well-organized belligerent such a system would be fatal. The French made this mistake in the Franco-German war.

The nominal strength of the French army was 525,000 men, of whom 350,000 were in the active army and 175,000 in the reserves. As the French desired to take the offensive, the active army, organized into eight corps, was at once pushed to the frontier, without waiting for reserves, or complete field equipment; these were to be sent to the corps when they reached their destination. As a result the army was not only unable to take the offensive, but when the German army crossed the frontier it found the French army corps scattered from Thionville on the north to Belfort on the south, and with a total strength of only 275,000 men. After the hostilities opened, the movements followed each other so rapidly that the French were never able to complete their mobilization.

Protection of Concentration.—Since the different units of an army arrive on the front of concentration in succession, some provision must be made to protect the troops

which first arrive from being overwhelmed by a sudden attack of the enemy. For this purpose *covering troops* are provided and the concentration, if practicable, takes place behind some natural obstacle which is not easily traversed by the enemy, as a river or mountain chain.

In the mobilization and concentration of 1914, the first step was to mobilize and concentrate on the frontier the army corps which were designed in the general plan simply to protect the territory during the period of mobilization and concentration. This required but a short time since the peace and war strength of these corps differed but slightly.

In the Franco-German war, the German armies were concentrated along the Moselle, between Trier and Coblenz, and along the Rhine from Mainz to Karlsruhe. In the civil war the Union armies were concentrated along the Potomac and Ohio rivers. The possession of the bridge-heads of a great river near the frontier is an important strategic acquisition, as it not only protects the concentration, but enables the possessor to assume the offensive. The possession of the great bridge-heads of the Rhine was always a subject of contention between the powers east and west of that river because of the advantages the river afforded as a line of concentration.

The Italian, Swiss and Austrian Alps, the Saxon and Bohemian mountains separating Austria from North Germany, and the Black Forest of Baden, Germany, have all been utilized at different times to cover the concentration of armies.

If there is no natural screen of sufficient strength in the vicinity of the frontier, it is customary to organize an artificial one by the construction of fortified places.

In 1914 the concentration of the French armies was protected by the two eastern fortified curtains—*Verdun-*

Toul and *Épinal-Belfort*. That of the German armies in Alsace-Lorraine by the fortresses of *Strassburg* and *Metz* and a number of smaller fortified positions between them.

The concentration of the German armies in the east was protected by the frontier fortresses of *Königsberg*, *Fort Boyen*, *Thorn* and *Posen*. That of the Russian armies was protected by the Niemen river with its fortresses of *Kovno*, *Olita* and *Grodno*, by the Narew river with its fortresses of *Osowiec*, *Lomza*, *Ostrolenka*, *Rozhan*, *Pultusk* and *Sierok*; by the Vistula river with its three great fortresses of *Novo-Georgievsk*, *Warsaw* and *Ivangorod*; and by the triangle of fortified places, *Luzk*, *Dubno* and *Rovno*. That of the Austrian armies in Galicia by the San river, its bridge-head at *Jaraslau* and the fortress of *Przemysl*.

Plan of Concentration.—The plan of concentration is the project drawn up in time of peace to govern the general character of the operations at the outbreak of a war. The plan determines whether the war shall be offensive or defensive, the particular territory which is to be made the seat of war, the particular line along which the strategic concentration is to be made, the means employed to protect the lines of invasion not covered by the field army. The scope of a plan of concentration can be more easily understood by taking an actual example. The one selected is the plan drawn up by Moltke in 1868–69, on the supposition of war between the North German Confederation and the allied powers of France, Austria, and perhaps Denmark. It was the result of several years of careful study. It was prepared shortly after Prussia had annexed the provinces of Schleswig–Holstein, claimed by Denmark, and had fought a successful war with Austria. Both states were therefore considered as possibly hostile.

STRATEGIC CONCENTRATION OF THE ARMY

Should Austria take part in a war declared by France against Prussia the division of our forces into two *equal* parts would give us a preponderance of force neither on our western nor on our southern frontier. The first question to be decided is, therefore, against which army shall we assume the defensive at the outset with a weak force, so that we may be able to assume the offensive against the other with a strong one.

The Rhine and its fortresses make a much stronger *defensive* line against France than any we can organize along the Austrian frontier; should we adopt the *defensive* against France we can count with certainty that the Rhine, held by 100,000 men, can check any French advance for six or eight weeks. To offset this, a passive defense of the Rhine would cause the south German states to remain neutral or take up arms against us. The French could also turn the left flank of our Rhine front by operating on Berlin via Worms and Franconia; while our offensive army in Austria, even if successful, might in the meantime be brought to a standstill before the fortress of Olmutz or at the Danube river. It is not improbable that the Austrians would abstain from undertaking operations in Bohemia or Moravia, and await the arrival of their allies, in the fortified camp of Olmutz or behind the Danube.

Should we assume the *offensive* against France, we should probably have six or eight weeks in which we could operate with a free hand before Austria would be in a condition to interfere; she is now in financial straits and has a weak skeleton army organization which would require a much longer time to mobilize than our own. Should we invade French soil, the French will be too proud to wait for assistance from Austria, and we shall be attacked at once. Here we are sure to find an opponent. The size of the armies, the narrowness of the front of operations, and the difficulty of subsisting troops, will compel each side to seek a prompt decision, and it is almost certain that inside the first week a battle must take place. If we are successful in this battle Austria will almost be com-

pelled to sheath her half-drawn sword. If in the meantime should Austria invade Silesia and even the Mark provinces, so long as our fortresses hold out and our defensive army retires without being beaten, nothing is definitely lost. It is probable that in France, after the first lost battle, a change of dynasty will result; as we desire nothing from France, the new powers would probably be willing to make peace.

For all these reasons, I hold that *ten* army corps should be concentrated for the offensive in the Palatinate, and *three* for the defensive be detached to operate against Austria. To reinforce the latter and to guard the coast, mobile landwehr divisions should be formed and the 17th division retained to observe Denmark; its place in the IX corps can be taken by the Hessian division. It is understood that all our armed force is to be employed against France should we engage that power alone, or for a considerable length of time.

DEFENSE AGAINST AUSTRIA

It is difficult to say in advance what numerical superiority Austria can utilize against us; it is certain that this superiority will be delayed by her lack of preparation. In 1866 in four months Austria placed 340,000 men in the field; there is no ground for assuming that she can do better now, as to numbers or time. Her internal conditions will hardly permit her to denude all her provinces of troops, and Russia and Bavaria will require her to post armies of observation on their frontiers. She would hardly feel willing to give Russia a free hand in the Danube principalities and in Galicia, while she concentrated her whole force against us. Outside of her Caucasian army, her forces in Bessarabia and on the eastern frontiers of Galicia, Russia can in a short time unite eighteen infantry and two cavalry divisions around Czenstochova which would threaten the rear of any Austrian force which invaded Silesia.

In all probability, Austria will be compelled to place an army of observation around Olmutz and another on the line of the Inn, and will be able to move against us with

only a fraction of her armed force. Even if at the beginning of the campaign Russia does not take an active part, the Austrian operations in Silesia will be more and more compromised by the position of the Russians as she advances further north. All circumstances therefore point to an advance of the Austrians from Bohemia directly on Berlin, and this along the right bank of the Elbe, since otherwise they would be obliged to cross that river between our fortresses and in the face of our organized defense. It is against operations along this line therefore that we must prepare.

With a view to the most rapid and simultaneous concentration of all the North German army corps, it is advisable that the I and II corps (the East Prussian and Pomeranian) be employed on this line, for the defense against Austria, and that these troops be reinforced to 83,000 men by the 1st and 3d mobile landwehr divisions. An active defense of the seacoast must under these circumstances be left to the troops permanently detailed for that purpose; this is possible since, under the conditions given, there is but little probability of a descent upon our coasts. In addition, the VI corps, which numbers 30,000 men, will be employed to defend Silesia. We therefore have for defense 113,000 men.

It would not be advisable to concentrate all these troops at a central point, such as Gorlitz, since Silesia should not at once be denuded of all troops, and the XII (Saxon) army corps should not be withdrawn from Dresden, without replacing it by at least one Prussian division.

The Silesian army corps (VI) can be best concentrated on the line Neisse-Frankenstein to guard the frontier and to threaten the main Austrian railway at Wildenschwert via Glatz. Should the Austrians advance through Silesia, it will be with the army which is assembled near Olmutz to observe the Russians; being thus hampered, its operations can be harassed by a small force. The VI corps is not strong enough to prevent an Austrian advance on Breslau, but it can flank this line of operations by retiring on Schweidnitz. Should the Austrians show any indication of uniting their entire force against Lusatia, the move-

ment of the VI corps to Gorlitz would be protected by the Bohemian mountains and expedited by two lines of railway.

Our main body will also be too weak to attack the enemy at once. Should it fall back directly on Berlin the enemy will naturally follow and we should be compelled to fight a decisive battle on the plains outside the city. A better course would be to undertake flanking operations, based either on the Oder or the Elbe river.

If the Oder is the base, the army must be concentrated at Gorlitz where the VI corps can unite with it; the retreat will then bring the army nearer the Russians. This base has its defects as the assistance of the Russians is only an eventuality, and furthermore to unite our army with a stronger ally is always undesirable, as it will bring it under his orders.

The Elbe forms a better base since the enemy's line of operations to Berlin is flanked at a shorter range, and on this river our defensive army remains in communication with our army on the Rhine, can be reinforced by it, and has a secure place of retreat in the intrenched camp of Magdeburg. The Elbe guarded by its fortifications of Dresden, Torgau, Wittenberg and Magdeburg, offers as great advantages as one can wish to operate on the flank of an enemy of superior numerical strength. Every advance from one of its bridge-heads compels the enemy to change front, and to make every effort to protect his flank.

In case of our defeat, a safe refuge may be found behind the river, while the pursuit leads the enemy further from Berlin. Under these circumstances an Austrian advance will not necessarily succeed; the particular steps to be taken to prevent it will become apparent when the adversary decides to march past us. Berlin must, however, be protected from raiding parties by a detachment posted on the direct road. The enemy will be compelled also to weaken his main body in order to protect his communications by investing Dresden, Torgau and Wittenberg, especially on the right bank of the Elbe. It is not improbable that this will so reduce the strength of the enemy's army that before he reaches our capital, his natural objective,

we may meet and fight a decisive battle by operating from Magdeburg.

These flanking operations will be more effective, the further up-stream they begin, therefore Dresden must be the point of strategic concentration of the 1st, 2d, 3d, and 4th infantry divisions (I and II corps), the 1st and 3d landwehr divisions and the 2d cavalry division; the 1st cavalry division will remain at Górlitz to keep communication open with the VI corps. Should our main body just before the outbreak of actual hostilities move from Dresden to the strong position of Stolpen with its right flank protected by the sandstone hills in this vicinity, and the Górlitz detachment advance to Bautzen, it will be possible at the very beginning to attack the enemy with full strength as he debouches from the Bohemian mountains. This will at least compel the enemy to follow us in the direction of Dresden. Further events fall in the province of active operations which can be here outlined only so far as the strategic concentration indicates.

From the South German states we can expect only that which is in the interest of all to execute. In a war waged with France alone, the union of the Bavarian army with the North German forces on the middle Rhine will be the most certain protection against an invasion of Bavarian soil by a French force, and if the Munich authorities see the situation in its true light they will carry out this plan. Such a union cannot be expected if Bavaria must protect her frontier against Austria. We may expect in this latter condition of affairs, that Bavaria will make heroic efforts and concentrate 60,000 men on the Inn. This concentration is all we can expect of Bavaria.

Threatening the rear of the Austrian concentration in Bohemia and Moravia, and even Vienna itself, that country will be obliged to detach an equal and probably a larger force to engage the Bavarians. Against such a force, the best plan would be for Bavaria not to hold Munich, but to attempt to check the advance of the Austrians in a decisive battle in front of Ingolstadt. We must not expect the Bavarians to take up a position at Ingolstadt at once; they will certainly exchange shots with Austria on the frontier before so doing.

Württemberg and Baden, being threatened more by France than by Austria, we may expect to unite in our offensive movement.

Should we have an early decisive battle in France, then if in the meantime Austria has advanced into Silesia or the Mark provinces, our line of operations against her will be via Württemberg and Bavaria.

Everything therefore depends on conducting a rapid and overwhelming campaign against France.

OFFENSIVE OPERATIONS AGAINST FRANCE

Less complicated than the defense against Austria is the offense against France. The principal object is to seek the main force of the enemy and attack it. The difficulty lies in executing this simple plan with the great masses of troops.

The active French Army is composed of 330,000 men, of whom 35,000 are in Algeria and 5000 in Rome. A portion of the line troops will necessarily be detached to garrison the principal cities and fortresses as soon as we assume the offensive; we may safely deduct 50,000 for this purpose. Even if corps of observation are not essential along the Pyrenees and the straits of Dover, hardly 250,000 men can be brought against us at the beginning of hostilities, while our ten North German corps number 330,000 men. The French have in addition 93,000 reserves who would be available for increasing the battalions of its active army from 800 to 1000 men. This does not seem to be contemplated, however, but they are to be organized into new units; this is another reason for rapid advance on our part.

We too have besides the guard and other organized landwehr divisions, a reserve of 26,000 men whom we may utilize. If we can count on our reinforcement by 30,000 men of the Baden and Württemberg divisions, the relative strength of the offensive forces will be 360,000 to 250,000 at the outbreak of hostilities, and 386,000 to 343,000 at a later period. This shows how important it is to take advantage of our numerical superiority at the outbreak of hostilities.

This superiority will be still further increased at the decisive points, if the French should attempt an expedition to our coast, or to south Germany. We can make preparations to resist the first without decreasing the strength of the field army, the second cannot be dangerous to us. It is essential to so concentrate our numerical superiority that at the critical moment it can be at once utilized, and thus the question arises, where can we expect to find the enemy?

The neutrality of Belgium, Holland and Switzerland confines the theater of war to the space between Luxemburg and Basle. Should France violate the neutrality of Belgium to approach the Prussian Rhine, outside of possible complications with England, she would be obliged to detach 80,000 to 100,000 men to observe the Belgian army at Antwerp and Brussels. The further advance of the French army along the Meuse we could attack to better advantage from the Moselle than from the Rhine.

Our Rhine front is so strong that immediate reinforcement is unnecessary, and besides, the distance from Brussels to Cologne is greater than that from Mainz, Trier, and Kaiseralautern to Cologne. Our attack from the south would compel our antagonist to face southward, to meet a flank attack. The primary concentration of our forces south of the Moselle will fully enable us to meet the danger of an invasion on the left bank of the Rhine, as well as to frustrate it by an offensive movement on French soil. As the violation of the neutrality of Belgium would also lead to political complications with England, it is improbable that France would resort to it, in view of the slight advantages resulting from it.

France would meet with no less serious difficulties should she attempt to unite with Austria by operating through Switzerland. More than 100,000 men would be required for a long period of time to conquer and occupy this mountainous country. Besides the interest of the two allied powers does not lead to immediate combined action, as they must pursue different objectives in separate theaters of war in order to accomplish the ultimate objective—the destruction of the Prussian war power.

We may therefore take it for granted that France will

effect the first concentration on the line Metz-Strassburg, in order to turn our strong Rhine front by way of the Main, to separate north and south Germany, to make terms with the latter, and to use it as a base for a movement towards the Elbe. Here too a concentration in the Bavarian Palatinate south of the Moselle of all available forces of north and south Germany is the simplest means of meeting such a plan. With a view of securing prompt results, the French may move with a portion of their forces from Strassburg into south Germany.

An operation up the Rhine on the flank of this movement would prevent its progress beyond the Black Forest and compel the enemy to protect his northern flank. If the Baden-Württemberg corps has attached itself to our left wing, we can so increase it from our camp in the Palatinate, that a decisive battle may be sought in the vicinity of Rastadt whose fortunate outcome would destroy the enemy. In order to effect this object we can afford to detach troops from our main body, since the enemy in our front is weakened by the size of the detachment he sends to operate on the Rhine.

Should the south German authorities insist on a direct defense of their territories by taking up a position behind the Black Forest, or in the vicinity of Ulm, we would be deprived of their immediate assistance. We must then let them manage their affairs independently since the march of a French army via Stuttgart and Munich becomes effective on our strategic flank, only when the decisive battles fought with our weakened foe in front are lost.

Should the French utilize their railway systems to form a quick concentration, they are compelled to detrain in two principal groups near Strassburg and Metz, separated by the Vosges mountains. Should the probably smaller group at the outset not move against south Germany, its union with the principal force on the upper Moselle can only be effected by regular marches.

In the Palatinate, we occupy interior lines of operation between these hostile groups. We can move against either one of them or if we are strong enough against both at once. The concentration of all our forces in the

Palatinate protects the lower as well as the upper Rhine and favors an offensive movement into the enemy's country; the last executed at the proper time will probably forestall any invasion of the German territory. The question is can we, without danger of being disturbed, effect our concentration beyond the Rhine in the Palatinate close to the French frontier? This question I unhesitatingly answer in the affirmative.

Our mobilization is ready to the smallest detail. Six through railways are available for transport to the territory between the Moselle and Rhine. The time-tables are prepared upon which are shown the day and hour when every unit starts and arrives. On the *twelfth** day, the first troops can detrain near the French frontier; on the *fifteenth* day, the combatants of the two army corps are there; on the *twentieth* day, the numbers have increased to 300,000 men; on the *twenty-fourth* day, the armies are supplied with their trains.

We have no reason to believe that the concentration of the French army, for whose mobilization no data exist, can be made more rapidly. Since Napoleon I, France has only effected partial mobilizations, by which the units of the part of the army which took the field were increased from those which remained in garrison.

On account of the effectiveness of their railway systems, and the ample supply of rolling stock, the French can, by emptying the garrisons and camps in their northwest territory, and without waiting for the incorporation of reserves, unite on the frontier in a very short time an army of 150,000 men. This carrying out of a rash initiative is in accordance with the national character, and has been discussed in military circles. Assuming that such an improvised army well provided with cavalry and artillery is decided upon, it would be united at Metz on the *fifth* day and on the *eighth* day might cross the frontier at Sarrelouis. We should still have it in our power to stop our railway transport, and detrain our troops on the Rhine. To that line the invasion would still require six marches,

* In the revision of this project for 1870 the numbers of days were changed to 10th, 13th, 18th and 20th.

and would be brought to a standstill by an equal force on the *fourteenth* day. Having control of the river crossing, we could in a few days assume the offensive with an army of double the numerical strength of the French army. The dangers of such a proceeding on the French side, in its further development, are so clear that one can easily foresee the result; apart from that, it could not take place if we assumed the initiative.

If the concentration of our forces in the Palatinate is deemed feasible, the apparent weakening of our Rhine front is no sufficient argument against its adoption. It has already been shown that this front is protected by the neutrality of the Belgians, and if this is violated, by distance, by its own inherent strength, and by active military operations.

Such a force as we shall raise against France can operate only when divided into several armies. The strength of each must be determined by its objective and its composition by the necessity of preparing it in the shortest possible time for field service. According to these considerations the following assignment cannot be changed:

First army—VII and VIII corps—right wing—60,000 men at Wittlich.

Second army—III, IV, X, and Guard corps—center—131,000 men at Neuenkirchen—Homburg.

Third army—V, XI, Baden—Württemberg corps, and a Bavarian brigade—left wing—99,000 men at Landau and Rastadt.

Fourth army—IX and XII corps—reserve—63,000 men in front of Mainz.

In case we should have war with France alone, 31,000 men could be added to the above as the I and II Bavarian corps would at once join the Third army; this would increase its strength to 130,000 men and the total force to 384,000 men. At the end of twenty days, after the railways had completed the concentration of the troops above mentioned, the I, II and VI corps could be forwarded; this would increase our total force to 485,000.

The plan continues by giving details governing the concentration of each particular army and prescribes the dis-

tribution of the landwehr divisions for coast duty. These details may be found in Clarke's translation of the German official account of the war. Vol. I, pages 54-56.

The plan was executed, substantially as given, in July and August, 1870; the second and fourth armies were united into one, and the three armies crossed the frontier before they were joined by the I, II, and VI corps, which were afterwards distributed among them.

PEACE HEADQUARTERS OF ARMY CORPS

I Königsberg	I Bavarian Munich
II Stettin	II Bavarian Würzburg
III Berlin	Each corps is composed of two
IV Magdeburg	divisions numbered 1 and 2,
V Posen	for I corps; 3 and 4 for II; etc.
VI Breslau	
VII Munster	
VIII Coblenz	
IX Hamburg	
X Hanover	
XI Cassel	
XII Dresden	
Guard Corps Berlin	

CHAPTER IV

THE CONDUCT OF STRATEGIC OPERATIONS

The term *campaign* was formerly applied to the résumé of all movements and combats of an army during a calendar year. Most of Napoleon's campaigns are still thus designated; as the *Campaigns of 1796, 1800, 1805, 1812*, etc. It is now more generally applied to such movements and combats as are connected with some important or decisive *event* in the *conduct* of the war; thus in our civil war we have the *Campaign of Gettysburg* and the *Campaign of Vicksburg*, to designate the movements of the armies and the minor combats connected with the battle of Gettysburg, and the capture of Vicksburg. The term *operations* is employed to designate the minor subdivisions of a campaign; thus we employ the expression *The Operations of the Cavalry in the Gettysburg Campaign*, to designate the part that special arm took in this campaign, and *The Operations along the Yazoo in the Vicksburg Campaign*, to designate so much of the campaign as took place in the designated part of the theater of operations. A war is therefore made up of campaigns, a campaign of operations.

Plan of Campaign.—Before a commander engages in any offensive movement he makes a preliminary study of the military situation and decides upon his plan of action. This plan, sometimes called the *plan of campaign*, sometimes the *plan of operations*, is based upon the strength and position of his own forces, and upon the strength and position of the forces and fortified places of the enemy,

and upon the available bases, lines of operation and communication, theaters of operation, and objectives.

“Plans of campaign are susceptible of infinite modification, depending upon circumstances, the character of the troops, the genius of the commander, and the topography of the country.”—*Napoleon*.

On the defensive, the plan of campaign determines the action of the commander under various assumptions as to the movements of the invader, fixes the point where the first defensive battle is to be offered, and the position in rear to which the army will retire if defeated.

A plan of campaign may be either a formal written document in which all the proposed movements are given in detail, or it may exist simply as a purpose in the mind of the general in command of the forces. When the chief executive or the commander-in-chief of the armies does not accompany the army into the field, either may require the general, actually in command, to submit to him for approval his proposed plan of campaign. Until Grant assumed command of the armies, the commander of the Army of the Potomac was always required to submit to the President his plan of an offensive campaign. This, although unfortunate, was natural, since the Army of the Potomac was looked upon as the sole protection of the national capital, for the safety of which the President felt himself responsible. Halleck, who succeeded McClellan and preceded Grant as the commander-in-chief of the armies, did not take the field himself, but remained in Washington as the President's military adviser, and passed upon these plans. The commanders of the western armies, being further from the capital, were not subject to the same rigid supervision.

When the chief executive is also the field commander

of the armies, as were Napoleon and Frederick the Great, he need not reveal his plans to anyone, and can thus insure that secrecy which is a great factor in the success of military operations. His plan of campaign is revealed only in his correspondence with, or in his orders issued to his subordinate commanders. In these communications he may express as much or as little of his designs as he considers advisable. It is impossible for such a plan to become known to the enemy through the medium of spies and newspapers.

A plan of campaign can definitely regulate the movements of an army only during the preliminary stages of the operations before the two armies are within striking distance of each other. When the influence of the enemy's presence is felt, then all operations must be conducted with reference to his movements so far as they can be learned. Although the main idea of the original plan of campaign is not forgotten and is steadily adhered to, the means of carrying out that idea must be changed with every modification of the military situation. The strategist who plans the campaign should therefore accompany the army into the field to study the ever changing military status, and prescribe the means by which each new condition of affairs may be met. For this reason, the preparation of a plan of campaign, its modification, and execution should, as far as possible, be left wholly to the commander of the army which is to make the campaign.

The essential requisites of a good plan of campaign are that it should be simple, be based on a correct estimate of the military situation, and on correct military principles.

“All complicated combinations should be avoided. Simplicity is the primary condition of all good maneuvers.”
—*Napoleon.*

This is particularly true of the movements of a large army, composed of many units. Such an army covers a large territory in which its position at any instant can be only approximately known to its commander, and all messages and orders can reach their destination only long after they are sent. Complicated operations therefore are liable to fail, because some column fails to reach its destination at a fixed time, or because some subordinate commander has either failed to receive his order or has received it too late to carry out his part of the combined plan. These facts will not be known to the commander-in-chief, and he will therefore be unable to modify his plan to suit the real conditions.

Military Information.—The military situation is learned by studying the organization of the enemy's armies and the theater of war in time of peace, and by supplementing the information thus obtained by that derived from patrols, scouts, prisoners, spies, deserters, newspapers, etc., after the outbreak of the war. Information concerning the front of the hostile army may be derived from scouts, patrols, prisoners, and deserters; information concerning movements behind the hostile screen, from spies, newspapers, and intercepted private or public communications. The information obtained from scouts and patrols is of two kinds; that derived from their own observation, and that derived from the testimony of others, as the inhabitants of the country. The value of the first varies with the experience, training, and intelligence of the individual; that of the second, with the ability of the questioner to examine, and with the character of, and circumstances surrounding, the individual questioned.

If the patrol or scout is operating in a hostile country, the information derived from the inhabitants will ordinarily be intentionally misleading and cannot be relied

upon; in a friendly country, the inhabitants will endeavor to give correct information and will fail only because of the failure of the ordinary individual to observe accurately, and because of his desire to convey the idea that he knows more than he really does. Important prisoners and deserters, although questioned by the scouts and patrols, are sent for examination to the intelligence department of the headquarters of some general officer.

Prisoners are naturally loath to give any information concerning the dispositions of their own armies, and try to mislead questioners. Napoleon says:

“All information obtained from prisoners should be received with caution and estimated at its real value. A soldier seldom sees anything beyond his own company and an officer can furnish information only of the position and movements of the division to which his regiment belongs. On this account the general of an army should never depend upon the information derived from prisoners, unless it agrees with the reports received from the advance guard, in reference to the positions, etc., of the enemy.”

The only reliable information that may be derived from a prisoner is that conveyed by his uniform; usually this indicates the organization to which he belongs. Marmont placed a higher value on the information derived from prisoners; for he says:

“More information can be gotten from prisoners than from the best of spies.”

The information given by a deserter must be estimated in accordance with his rank and duty in the hostile army, and the causes which led him to take the step. There will ordinarily be a temptation for him to exaggerate his importance by drawing upon his imagination for his alleged facts.

All military commanders have made use of spies to learn of the movements and dispositions of the troops in the enemy's country, perhaps no one more so than Napoleon. Sometimes the information obtained has been of immeasurable value and at other times it has been worse than valueless, for it has given the commanders an erroneous conception of the military situation.

When *Lee* made his invasion of Pennsylvania in 1863, *Stuart* with his cavalry maneuvered in such a manner as to place the Union army between himself and *Lee*. He therefore deprived his chief of the means of getting information of the movements of the Union army through his own cavalry. From the time *Lee* crossed the Potomac, he was ignorant of Hooker's movements until a few days before the battle of Gettysburg. The concentration of the Confederate army at that point was based on the information of a single spy who was employed by *Longstreet* to enter the Union lines; this spy followed the Union movement to Washington and Frederick, and there left the Union army to rejoin *Longstreet*.

McClellan's secret service department was worse than useless. In a report of March 8, 1862, the Chief stated:

"The summary of the general estimates shows the forces of the rebel *Army of the Potomac* to be 150,000 as claimed by its officers and sanctioned by the public belief, and that over 80,000 were stationed at Centreville, Manassas, and vicinity, the remainder being within supporting distance."

The returns of that army at the end of February show that its aggregate strength present for duty was only 56,000, and its paper strength 84,000. In the Peninsula campaign the numbers given by the chief of the secret service were at least twice the strength of the Confederate army. It is impossible to state to what extent McClellan was influenced by these statements; as he uses them in

his official reports, and was timid in his offensive movements, he probably placed faith in them. Before the opening of the Atlanta campaign, Sherman was very accurately informed of the strength of *Johnston's* Confederate army through some spies employed by Thomas. Thomas was careful to employ two spies who were unknown to each other.

Newspapers also give an insight into the movements of the troops in the enemy's country. On September 7, 1805, Napoleon wrote to his chief of staff, Berthier:

“Please inform me whether you have directed anyone to follow the marches of the Austrian army and to classify them in the box I have specially prepared for the purpose. The name of each regiment should be written on a card and the cards changed in the case whenever a regiment changes station . . . Let the person charged with this work subscribe for the German gazettes published in Vienna, Munich, Salzburg, Dresden, Ratisbon, and Berne.”

The employment of war correspondents by all the principal newspapers, and the rivalry between them, has largely added to the value of newspapers as sources of reliable information. During the Spanish-American war, a careful reader of our newspapers was fully informed of the progress of recruiting, equipment, and training of the army, the commanders of the combined units, and practically all the preparations made before the V corps sailed for Cuba or the VIII corps for the Philippines. In the Franco-German war, the organization of the French army became known to the Germans through the French press, and in the progress of the war, the important movement of *MacMahon* from Chalons towards Metz was communicated to the German officials through a telegram to the London papers, before it was discovered by the German cavalry.

In the Russo-Japanese war and in subsequent wars, the information sent out by correspondents has been closely censored and is less valuable than heretofore.

Napoleon had no scruples, when it was a question of getting information for political or military purposes, and did not hesitate to tamper with private letters, transmitted through the mails. This source of information has also been utilized by other commanders. In the war of 1914-1917, Great Britain seized and opened all mail carried by neutral vessels through the Channel or the North Sea.

No information derived from any of the above sources should be considered absolutely trustworthy, until it is confirmed by one or more independent sources of information.

In the war of 1914-1917 new and invaluable means of securing military information were first employed on a large scale. These were the various types of air-craft which flew over the enemy's lines and sometimes penetrated far in rear of them.

By means of air-craft it is now possible to map an enemy's position with considerable accuracy and also to discover any large movement of troops along his lines. It has made it necessary to mask as far as practicable all military positions and to move troops under the observation of air-craft only at night.

Military Principles.—Correct military principles are learned from a study of the important campaigns of history, and from comments and criticisms of those campaigns by their participants, or by able military students. Military principles are to the art of war what the principles of mechanics are to the art of engineering. By means of a knowledge of the principles of mechanics an engineer may make a correct design of a bridge, but the practical knowledge of the workshop and the field, and a

well-organized force of workers are essential to the execution of the design, and the erection of the bridge in place; so in war, by means of a knowledge of the principles of the art, a commander may correctly plan a campaign, but practical experience in the field and a well-organized force are essential to its execution. A well-designed bridge may fail through bad workmanship, and a badly designed one may stand because of good workmanship or a large factor of safety; so also may a well-planned campaign fail through bad execution or through inferiority of the troops, and a badly planned one succeed, because of the excellence of the execution or the superiority of the troops.

From the commentaries of Napoleon we have the following observations, maxims, and principles, for the planning and execution of military campaigns.

I. "*In forming a plan of campaign, it is requisite to foresee everything the enemy may do, and to be prepared with the necessary means to prevent it.*"

Moltke's plan of concentration given in the last chapter illustrates the meaning of this maxim. Every probable movement of the French and Austrian armies is considered and provided for. A campaign planned without giving due consideration to the possible and probable operations of the army was that of Bull Run in July, 1861.

In the early part of July, 1861, the Union and Confederate forces in northern Virginia were distributed as follows: McDowell with an army corps of 36,000 men was on the south bank of the Potomac opposite Washington; Patterson with a division of 13,000 was in the Shenandoah valley at Martinsburg; *Beauregard*, with a corps of about 22,000 men, was in the vicinity of Manassas Junction, with his main body occupying a defensive line along the south bank of the Bull Run; *J. E. Johnston*

with a division of about 11,000 men was in the Shenandoah valley at Winchester.

From a study of the situation, it is evident that *Johnston* and *Beauregard*, being only forty miles apart and having the use of the Manassas Gap railroad, could readily unite either at Winchester or at Manassas, and that neither the force of McDowell nor that of Patterson could safely attack the combined Confederate forces. Notwithstanding these conditions, the plan of the Union authorities contemplated independent movements by McDowell and Patterson against the Confederate forces in their front. As McDowell's movement was the more aggressive and the more threatening, *Johnston* left the valley and united his forces with those of *Beauregard* at *Bull Run*.

Having left 6000 men to protect his communications, McDowell's force was no stronger than the combined Confederate forces, and as the latter had the advantage of a good position in which to receive his attack, the Union corps met with a disastrous defeat. Had Patterson's force been united with that of McDowell for a joint movement from Washington, the Union army would have been numerically stronger than the Confederate, and the probability of success would have been in its favor.

However skillful the commander of an army may be, he will always be more or less uncertain as to the probable action of his adversary unless he can deprive him of the power of the initiative. This may be done by assuming the offensive and executing it with vigor and rapidity. The adversary is thus reduced to the passive defense of warding off the blows struck by the assailant. This was the mode of warfare pursued by Frederick the Great, Napoleon, and Moltke, who gave their enemies little time to formulate plans of campaign or defense. A vigorously sustained offensive campaign, however, requires a well-

trained field army and a well-organized supply train, as well as a good military system for reinforcing the army with recruits and reserves. The defective training of the volunteer armies of our civil war made rapid and persistent offensive movements even under such commanders as Grant and Sherman impossible, and gave to the Confederates time to plan and execute the bold offensive measures which so often defeated the plans of the Union commanders.

II. *“Nothing is so important in war as undivided command. Two independent armies should never be in the same theater of operations.”*

It is self-evident that the entire military resources of a state can be utilized to their full effect only when they are controlled by a single will and when all the countless subdivisions into which that force is divided are working in unison towards a single end. Division of command was a characteristic of the Union system of organization until Grant took command in 1864; finding the country divided into nineteen separate territorial departments, he at once consolidated the departments into three territorial divisions so that there should be but one commander in each natural division of the theater of war. First Banks, then Canby, commanded the troops west of the Mississippi, Sherman those between the Mississippi and the Alleghany mountains, and Grant personally took command of those east of the Alleghanies. He outlined to the commanders of the separate armies the duty he expected each to perform so that all operations would tend to the destruction of the Confederate armed force, but left to each commander the details of the plans of campaign of his own army.

The advantages of undivided command and the disadvantages of separate commands in the same theater of

operations have no better illustration than the operations in Virginia in 1862.

In February, the States of Maryland, and Virginia north of Richmond, formed the Union Department of the Potomac, under McClellan and contained a force of 185,000 men present for duty; this force was concentrated along the Potomac river. The country about Fort Monroe, Va., formed the Union Department of Virginia under Wool, and had a force of about 10,000 men present for duty. The State of Virginia north of Richmond formed the Confederate *Department of Northern Virginia* under *Joseph E. Johnston* and had a force of 48,000 concentrated along Bull Run, the Occoquan, and at Winchester in the Shenandoah valley; the peninsula between the York and James rivers formed the Confederate *Department of the Peninsula* under *Magruder* and had a force of 13,000; the country between Chesapeake and Albemarle sounds formed the Confederate *Department of Norfolk* under *Huger* and had a force of 12,000. The entire Union force in this theater of operations was 195,000 men, the Confederate force 73,000 men.

McClellan's plan of campaign was to leave about 34,000 men in the defenses of Washington, and with the remainder of his army to move on Richmond via the Peninsula between the York and James rivers, using Fort Monroe as a secondary base. The authorities approved his plan but insisted on his leaving a force of 55,000 men, so that they might hold Manassas Junction as well as Washington.

At the beginning of the movement one of McClellan's five corps under Banks was in the Shenandoah valley; this he proposed to move to Manassas Junction, leaving only a small force to watch the valley. An offensive movement by *Jackson* in the valley having prevented this

corps from carrying out its part of the plan, the authorities insisted on detaching from McClellan's army another corps, McDowell's, to occupy Manassas Junction. At the same time the authorities detached a division of 10,000 men from the army of the Potomac to report to Fremont in West Virginia. Besides these changes, which reduced his army from fourteen divisions to eight, both McDowell and Banks were made independent commanders. Thus the original Army of the Potomac was divided among four independent commanders all operating in the same territory and against the same army.

While these changes were being effected in the Union army and McClellan was moving from Fort Monroe, *Johnston*, leaving a small force along the Rappahannock and in the valley of the Shenandoah, fell back and united his main force with *Magruder* on the Peninsula; a little later, in front of Richmond, they were joined by *Huger*, and thus the Confederate army was united under a single commander.

The subsequent operations proved the correctness of Napoleon's maxim. Under the able leadership of *Lee*, who succeeded *Johnston*, *Jackson*, who commanded a detached force in the Shenandoah valley, attacked and defeated two detached brigades of Fremont under Milroy and Schenck, near Staunton, and drove Banks beyond the Potomac; he then united with *Lee* at Richmond and the latter, with the united Confederate army, attacked and defeated McClellan, and forced him to retire to the James river.

The Union authorities tried to repair their error by uniting the forces of Frémont, Banks, and McDowell into a single army under Pope. As was shown in a previous chapter this did not remedy the situation, and the authorities were finally compelled to withdraw McClellan

from the James river to reunite the original Army of the Potomac once more near Washington. Had McClellan retained the command of all the forces in the State of Virginia, it is difficult to see how he could have been defeated even by a superior commander.

III. *“At the commencement of a campaign, to advance or not to advance, is a matter for grave consideration, but when once the offensive is assumed it must be sustained to the last extremity. However skillful the maneuver, a retreat will always weaken the morale of an army.”*

In order to sustain the offensive it is essential that the numerical superiority at the point of contact be sustained, and that provision be made promptly to restore the losses caused by battle and disease, and to guard the lengthening communications as the army advances. As has been previously shown, Moltke began the Franco-German war with a great numerical superiority; to prosecute the war with vigor, however, he found it necessary to reinforce it with nearly 250,000 men in the course of six months. The excellent organization of the depot troops, reserves and landwehr enabled him to do this without difficulty.

In 1862 McClellan reached the suburbs of Richmond with an army which had suffered little loss in the previous engagements, but yet was too weak to make him feel confident of carrying the city by assault against the intrenched army of Lee. He called for reinforcements, but there were none to send him; the authorities had not foreseen such a contingency, and had closed all the recruiting offices before the campaign was begun, and had no organized reserves. As a result the excellent secondary base on the James river had to be abandoned and McClellan's army withdrawn to Washington to begin a new campaign. In 1864 Grant reached the same position only after the

battles of the *Wilderness*, *Spottsylvania*, and *Cold Harbor*, in which the losses in killed, wounded and missing were 60,000 men. However, he was able to continue the offensive because the army was being constantly recruited under the calls for volunteers issued by the President in February, March, April, July, and December, 1864.

During the civil war, *Lee* twice invaded the Northern States for the purpose of compelling the withdrawal of the Union armies from Virginia. He succeeded in this purpose, but not having sufficient strength to sustain the offensive through at least one decisive battle, the temporary advantage thus gained was soon lost through his compulsory retreat.

IV. "*An army should have but one line of operations;*" and as corollaries to the above, "*it is contrary to all true principles to make corps which have no communications act separately against a central force whose communications are open*"; and "*an army should always keep its columns so united as to prevent an enemy passing between them with impunity.*"

This principle is in a certain degree a corollary to the second, since any division of the army leads to a division of the command.

When he enunciated this principle Napoleon was discussing the four campaigns made in 1796 and 1797 by the Austrian generals, Wurmser and Alvinzi, for the relief of the fortress of Mantua in northeastern Italy which was being besieged by a part of the French army under Napoleon. The greater part of Napoleon's army acted as a covering force in the area between Mantua and the line Legnago-Verona-Rivoli-Salo.

To reach the territory occupied by the French covering army the Austrians could advance from Trent either down the valley of the Chiese west of Lake Garda or down the

valley of the Adige east of that lake. They could also advance from the east and force the Adige river at Verona, at Legnago, or at some point between those places.

In each of the four campaigns the Austrians advanced in two or more columns by these various roads and in each campaign they were defeated by Napoleon with an inferior force acting from his central position against the separated columns before they could be united.

A similar situation occurred in Virginia in July and August, 1862, when it was planned that McClellan should advance from his new base at Harrisons Landing on the James river against Richmond, and Pope should advance against the same place from the north. From his central position between the two Union armies, *Lee* easily defeated this plan.

A like situation occurred in May and June, 1864, when Grant advanced from the north and Butler from the south against Richmond.

In the latter part of August, 1914, two Russian armies invaded east Prussia: the Wilna army came from the east and the Narew army from the south. The two armies were separated by the great lakes in southeastern East Prussia. This separation enabled Hindenberg with a much inferior force to defeat the Russian plan. Holding the Wilna army in check with a small force, he attacked and destroyed the Narew army with his main force in the battle of *Tannenberg*. This compelled the Wilna army to retire across the frontier to its fortified base on the Niemen river.

V. *“When the conquest of a country is undertaken by two or three armies, each of which has a separate line of operations until they arrive at a point fixed upon for their concentration, it should be laid down as a principle, that the junction should never take place near the enemy, because the enemy by*

uniting his forces, may not only prevent the union of the armies but may defeat them in detail."

In 1864 Grant, not wishing to abandon any of the Confederate territory in Virginia then occupied by the Union troops, decided to operate in the following manner. Sigel, commanding the department of West Virginia, was directed to move up the valleys of the Shenandoah and Kanawha on Lynchburg; Meade with the Army of the Potomac from Culpeper Court House on Richmond; and Butler with the Army of the James from Fort Monroe via water to the junction of the James and Appomattox rivers and thence by the south bank of the James to Richmond.

Operating from his central position in front of Richmond, the confederate commander, Lee, was able to interpose a force between Meade and Sigel and to defeat Sigel and his successor, Hunter, and thus prevent the union of the right column with either of the others. He was also able to check the advance of the left column under Butler, and render its operations futile until the Army of the Potomac crossed the James river and united with it.

The Prussian invasion of Austria in 1866, as heretofore described, violated this maxim and some writers did not hesitate to criticise Moltke for concentrating the Second Army so far away from the First and Third. His answer was that the Second Army was concentrated in the province of Silesia for the protection of that rich province; that the union of the Prussian armies at the right moment was never claimed by the Prussian general staff to be a brilliant or a very learned combination. It was only a sensible, well-considered and energetically executed remedy, for a primary concentration which was unfavorable, but at the same time necessary.

The Second Army, it will be remembered, arrived at a very opportune moment on the day of the battle. He

claims some advantages for a double concentration, in that a great force is more easily supplied and marched when it is divided into two or more groups than if kept in one. In a previous study of the same problem, he had united the whole army on the Saxon frontier and left only the VI corps in Silesia.

A similar situation occurred at the beginning of the Russo-Japanese war. It was essential for Japan to secure a foothold in Corea to serve as a base for further operations and prevent its falling into the possession of the Russians. For this purpose the First Army under Kuroki was sent there at the very outbreak of the war and advanced to the Yalu river, which separates Corea from Manchuria. The next most important operation was the investment of the fortress of Port Arthur and the capture of its fleet. For this purpose the Second Army under Oku was landed at Pitsewo and moved south to secure a base of operations in the harbor of Dalny. Here the Third Army was organized to attack Port Arthur. These preliminary operations having been successfully accomplished, it became necessary to move the First and Second armies against the Russian *Army of Manchuria*, whose headquarters were at Liaoyang.

In order to attack the Russian army before it could be strongly reinforced from Russia, it was decided by the Japanese military authorities to move the First and Second armies by the shortest lines to Liaoyang. Precaution was taken to connect them by the Fourth Army under Nodzu, which was landed at Takushan. This concentric movement was a delicate and dangerous one but was rendered necessary by the preliminary concentration. It was successfully carried out and the Japanese won the battle of *Liaoyang* because of the superiority of their arm as a fighting and maneuvering force.

With modern facilities of communication such movements are less hazardous than in the time of Napoleon, but are always dangerous, especially if the adversary is active.

A meeting of two Union armies on the battlefield took place in our civil war. In March, 1862, Grant, who was on the Tennessee river near Fort Henry, and Buell, who was at Nashville, were ordered to unite their forces near Savannah on the Tennessee river for a joint movement on Corinth, Miss. Grant moving by water was first to reach the rendezvous and encamped most of his army at Shiloh or Pittsburg Landing, on the west bank of the Tennessee river near the Alabama line. *Beauregard*, who, under *Albert S. Johnston*, was in command of the Confederate forces at Corinth, about twenty miles distant, advised the latter to attack Grant before Buell could reach him. As a result there was fought on April 6, 1862, the first battle of *Shiloh* between the forces of Grant and *A. S. Johnston*, in which the former was surprised and defeated though not decisively. In the evening and night Buell reached the field, and on April 7 was fought the second battle of *Shiloh* in which the exhausted Confederates were obliged to confront a new army, and in which they were decisively defeated and compelled to retreat.

The above examples show the danger attending the use of separate lines of operation uniting near or in the enemy's territory; had the Second Army reached Königgratz, or Buell Shiloh, a half day later, the result might have been disastrous to the army first engaged by the enemy.

VI. "*The lines of operation should be preserved with care and never abandoned save in the last extremity; but it is one of the most skillful maneuvers in war to change it when circumstances authorize it, or render it necessary.*"

In announcing this principle, Napoleon had in mind an

army moving along a single route which was also its line of supply and retreat. If the army is forced to abandon this line, its further movements become seriously embarrassed by the difficulty of subsisting the troops. An army may be forced from its line of operations by a flank attack, and it may lose its line by operations conducted in its rear.

If two opposing armies of equal strength are operating along the same route, it would be difficult for one to operate against the flank of the other without exposing its own line. If, however, they are of unequal strength, the stronger may overlap the weaker and make a flank attack. If they are operating on parallel lines, each threatens the flank of the other, and the advantage is with the army which is the superior, through leadership or other causes. If an army can support one or both flanks on an impassable obstacle, as a wide river or range of mountains, its flanks are thus rendered secure against flank attacks. If the lines of operation of two opposing armies intersect and make a considerable angle with each other, each army is safe against flank attack until it approaches the point of intersection, and each is liable to have its communications severed if it passes that point.

The operations in rear of an army are usually executed by raiding parties of light troops whose object is to destroy the depots, and if the line is a railway line, to render it useless for a considerable length of time. The cavalry in the civil war became exceedingly expert in such operations, and the protection of the Louisville-Nashville-Chattanooga-Atlanta railway against the raids of *Forrest* and *Morgan*, as well as against the hostile inhabitants, was one of the chief cares of the Union commanders. When Sherman in 1864 began his Atlanta campaign, this railway was protected by block-houses and field-works at every

bridge and tunnel, and a large railway department was organized for rapid repair. For its protection by the troops he issued the following order:

“Army commanders will give great attention to their lines of communication. A small force in a block-house, disencumbered of baggage and stores not needed, can hold their ground and protect their point until relief comes. They should be instructed to fight with desperation to the last, as they thereby save the time necessary for concentration. Small reserves capable of being shifted to a way-point by a train of cars should be placed judiciously and instructed. The main reserves will be at Nashville, Murfreesboro, Columbia, Decatur, and Stevenson, from which places they can be rapidly transported to the point of danger. . . . On notice of danger the commanding general of the reserves at Nashville will promptly provide for the emergency, and see that damages, if done, are quickly repaired, but all officers are cautioned against the mischievous and criminal practice of reporting mere rumors, often sent into our lines by the enemy for his own purposes. Actual facts should be reported to the headquarters at Nashville and in the field, that they may be judged in connection with other known facts. An army of a million men could not guard against the fabulous stories that are sent to headquarters. Officers must scrutinize and see with their own eyes, or those of some cool, experienced staff officer, before making reports that may call off troops from another quarter, where there may be more need of them. When troops are intrenched or well covered by block-houses, a surrender will entail disgrace, for we have all seen examples when a few determined men have held thousands in check until relief came or the necessities of the enemy forced him to withdraw.”

The means employed by the British in South Africa to protect their railways have already been described.

The comments made by Napoleon on changing the line of operations had reference to the maneuvers of Frederick the Great in the battle of *Leuthen*. In order to make a

flank attack on the enemy he abandoned the line of communication running from Breslau to Liegnitz along which he approached the battlefield, and opened a new line to Schweidnitz. This enabled him to make a flank attack with his new line of supply and retreat in his rear.

Napoleon made a similar change before the battle of *Austerlitz*. He reached this field by coming from the south from the Austrian capital, Vienna. As his adversaries, the allied Russians and Austrians, would naturally approach from the east on the direct road from Russia to Vienna, to better preserve his communications, Napoleon opened a new line of communications, perpendicular to his first line, from Brunn through Bohemia to Ratisbon. The Allied army, unaware of this change, planned an offensive operation, having for its object the capture of Napoleon's line of retreat between *Austerlitz* and Vienna. The false premise upon which their plan was based led to their disastrous defeat.

In our civil war, there were several examples of skillful changes of lines of supply and retreat. When McClellan was in front of Richmond in 1862, his position extended from Mechanicsville via Fair Oaks and Seven Pines to White Oak Swamp; his line of communications was the railway running eastward to the secondary bases he had established on the Pamunkey river at White House, and on the York river at West Point. By making a successful flank attack on the Union right wing, north of the Chickahominy river, *Lee* severed McClellan's connection with White House. McClellan had fortunately foreseen this contingency and had directed his engineers to explore and open the roads southward to Harrison's Landing on the James river to which he successfully withdrew his army.

Grant in his Virginia campaign began his operations at

Culpeper north of the Rapidan river, supplying his army by the Orange and Alexandria railroad; he moved around the east side of Richmond and south side of Petersburg, using in succession the Richmond and Potomac railroad, the York and the James rivers as lines of supply, and successively changed the direction of his line of operations through an arc of over one hundred and eighty degrees.

Roberts executed this maneuver in the South African war. When organizing his field army at Belmont for the relief of Kimberley, his line of supply was the Capetown-Kimberley railway, which was securely held in his front behind the Modder river by the Boer general, *Cronje*. The Bloemfontein line was held at the Orange river by a second Boer force. Roberts abandoned his line of supply, and moved eastward around *Cronje's* left flank towards the Bloemfontein railway north of the Orange river. By this means he threatened the communications of both Boer forces and compelled them to retreat. In this retreat *Cronje's* force was surrounded and captured at *Paardeberg*. After destroying this force, Roberts moved to the Bloemfontein railway and opened it as a new line of communications from which to operate against the other retreating Boer forces.

To know how and when temporarily to abandon a line of operations is also a mark of military genius. When, in 1864, Sherman reached the position of Atlanta, he found the Confederate army in an immense intrenched camp. To dislodge it from this position it was necessary to take possession of the railways to the south of the city, which were the Confederate lines of supply. He could do this only by temporarily abandoning his own line of communications. Leaving one corps intrenched on the Chattahoochie river at the end of the Chattanooga-Atlanta

railroad, he marched the remainder of his army entirely around the Confederate position, captured its lines of supply and compelled the Confederate army to abandon Atlanta. This enabled him to reestablish his own communications.

VII. *“An army should be ready every day, every night, and at all times of the day and night, to oppose all the resistance of which it is capable.”*

Napoleon adds:

“With this in view, the soldier should invariably be complete in arms and ammunition; the infantry should never be without its artillery, its cavalry, its generals; and the different divisions of the army should be constantly in a state of support and to be supported. The troops whether halted or encamped, or on the march should be always in favorable positions, possessing the essentials required for a field of battle; for example, the flanks should be well covered, and all the artillery so placed as to have free range and to maneuver to the greatest advantage. When an army is in column of march, it should have advance guards and flanking parties, to examine well the country in front, to the right and to the left, and always at such distance as to enable the main body to deploy into position.”

Since a commander is often deceived in war as to the position and force of the enemy, the information derived from spies, prisoners, and scouts, being more or less unreliable, he should always be ready to attack or to meet the attack of an enemy whom he may unexpectedly encounter.

VIII. *“A commander-in-chief should ask himself frequently in the day, what should I do if the enemy’s army should now appear in my front, on my right, or on my left? If he have any difficulty in answering these questions, he is badly posted, and should seek to correct his disposition.”*

In the Shiloh campaign, while the Army of the Ten-

nessee under Grant was awaiting the arrival of the Army of the Ohio under Buell it was encamped on the west bank of the Tennessee river. Five divisions or 33,000 men were at Pittsburg Landing and one division was at Crump Landing five miles below. Sherman's division formed the front line of the camp at Pittsburg Landing facing southward; Grant had his headquarters at Savannah, nine miles to the north. Both Grant and Sherman were so convinced that the Confederates would remain on the defensive that no special precautions were taken to guard the camp from surprise.

This confidence enabled the Confederate *Army of Mississippi* to move up from Corinth twenty miles southwest, form line of battle, and approach to within one and a half miles of Sherman's division before its presence was discovered.

The Union army was saved from destruction by the tactical errors of the Confederate commanders, the individual bravery of the officers and men of the Union army and by the timely arrival of the Army of the Ohio. The two Union commanders, who later became masters of the art of war, never forgot this lesson. The following are Napoleon's maxims on the establishment of such camps.

IX. *"The art of encamping in a position is the same as the art of deploying in order of battle in the position. To this end, the artillery should be advantageously placed. Ground should be selected which is not commanded nor liable to be turned, and, as far as possible, the guns should cover and command the surrounding country.*

X. *"Never lose sight of this maxim, that you should establish your cantonments at the most distant and best protected point from the enemy, especially where a surprise is possible. By this means you will have time to unite all your forces before he can attack you."*

On the subject of concentration before a probable battle Napoleon says:

XI. "*The first principle of war is that a battle should be fought only with all the troops that can be assembled on the field,*" and as corollaries: First, "*When you have resolved to fight a battle collect your whole force. Dispense with nothing, a single battalion sometimes decides the day.*" Second, "*When you are determined to risk a battle, reserve to yourself every possible chance of success, particularly if you have to deal with an adversary of superior talent.*" Third, "*No force should be detached on the eve of battle because affairs may change during the night, either by the retreat of the enemy or by the arrival of large reinforcements which will enable him to assume the offensive and counteract your previous dispositions.*"

Out of thirty-eight principal battles fought by Frederick the Great and Napoleon with various adversaries, *twenty-five* were won by the contestant having the greater and *thirteen* by the one having the lesser numerical strength. In battles personally conducted by either of these great tacticians the chances of victory and defeat were about even if the odds against them did not exceed five to three. They occasionally lost with less odds, and occasionally won with greater odds against them. In our civil war, the only important battles won with the numerical odds against the victor, were *Pea Ridge, Franklin, Second Bull Run, Fredericksburg, Chancellorsville, Spottsylvania* and *Cold Harbor*. Of these, the last five were won by *Lee*, who was, however, unable to overcome the odds against him at *Malvern Hill, Antietam, and Gettysburg*.

Napoleon himself almost lost the decisive battle of *Marengo* in 1800, by detaching Desaix with one of his divisions to go to another part of the theater of operations on the day before the battle. He was saved by the

opportune return of Desaix towards the close of the day, after the Austrians had concluded that the battle was definitely over and Napoleon was decisively defeated.

XII. "*It is an approved maxim in war, never to do what the enemy wishes you to do, for this reason alone, that he desires it. A field of battle, therefore, which he has previously studied and reconnoitered, should be avoided, and double care should be taken where he has had time to fortify or in-trench. One consequence deducible from this principle is, never attack a position in front which you can gain by turning.*"

When the defender finds himself threatened by a serious attack in one part of the theater of war, he may attempt to ward it off by making a demonstration in another part. The invader must not let such a movement divert him from his original plan or main objective. In McClellan's Peninsula campaign, it will be remembered that he reached Fort Monroe with but *eight* of his *fourteen* original divisions; another was sent to him at Yorktown; so he reached the front of Richmond with *nine* divisions. McDowell, who was at Fredericksburg with *four* divisions, was about to advance along the Fredericksburg-Richmond railway to join him. This movement was stopped by orders from Washington, and despite the protests of McClellan and McDowell, the latter's force was directed against *Jackson*, who was making a demonstration in the Shenandoah valley for the very purpose of preventing McClellan from being reinforced. Had McDowell's advance on Richmond been vigorously pushed, while *Jackson* was in the valley, McClellan would have had at least 35,000 more men and Lee 20,000 less, in the battles which closed the campaign.

The history of warfare, particularly since the invention of rifled firearms, is full of examples of unsuccessful frontal assaults on fortified positions, and with each new improvement of firearms they became more difficult. It must be

remembered, however, that turning an army out of position is only delaying the day of battle, and it is this battle which must ultimately decide the fate of the campaign.

In the spring of 1863, while the Army of the Cumberland under Rosecrans was at Murfreesboro in Tennessee, the Confederate *Army of Tennessee of Bragg* occupied a strongly intrenched line in his front extending from Shelbyville to Fairfield across the Nashville and Chattanooga railroad. By threatening the left of *Bragg's* line and at the same time concentrating his force and turning its right, Rosecrans was able to compel *Bragg* to retreat to Chattanooga without fighting a battle.

In the autumn, Rosecrans decided to maneuver him out of Chattanooga in the same manner, by threatening *Bragg's* right and front, and then turning his left by moving his troops over Lookout mountain into the valley of Chickamauga creek south of Chattanooga. In making this movement, he violated the principle of keeping his army united, and his separate columns crossed the mountains through widely separate passes and debouched from them almost in the face of *Bragg's* united army, which had quietly retreated from Chattanooga to Lafayette, Ga.

Had *Bragg* properly seized the advantages of his position he might have destroyed one or more of Rosecrans' columns; as it was he gave Rosecrans time to concentrate, and only partially defeated him in the battle of *Chickamauga*. Rosecrans, however, was compelled to seek refuge in Chattanooga to reorganize his army, and was invested by *Bragg* until relieved by reinforcements sent from the Army of the Potomac and the Army of the Tennessee.

Sherman's Atlanta campaign is a good model for the conduct of such turning movements. Without ever expos-

ing his communications, or his separate corps to be destroyed in detail, and without making more than one front attack on entrenched lines, *Kenesaw Mountain*, he succeeded in compelling *Johnston* to evacuate one entrenched position after another until he was forced back from Dalton to Atlanta, Georgia.

XIII. "*The strength of an army, like power in mechanics, is estimated by multiplying the mass by the rapidity; a rapid march augments the morale of an army, and increases all the chances of victory.*"

Jackson of the Confederate army was particularly noted during the civil war for his rapid marches.

In 1862, in the operations in the Shenandoah valley, by rapidly marching and combining his small army of less than 20,000 men, he defeated in succession the Union commanders *Milroy*, *Schenck* and *Banks*, and prevented a reinforcement of 40,000 men under *McDowell* from being sent to *McClellan* to assist him in his operations against *Richmond*. He thus paralyzed the offensive movements of the entire Union army of nearly 200,000 men.

In 1863 by a rapid march he passed the front of the Union army under *Hooker* at *Chancellorsville*, Va., and attacked it in flank and rear. Although his corps numbered but 22,000 men, this attack was the primary cause which led to the retreat of the entire Union army of 124,000 men to the north bank of the *Rappahannock* river.

Napoleon's campaigns of 1796-97 are also brilliant examples of rapidly executed maneuvers and combinations which disconcerted and defeated the more deliberate Austrian commanders. On the night of January 13, 1797, preceding the first day's battle of *Rivoli*, *Massena's* division marched from *Verona* to the battlefield, a distance of fifteen miles; it fought most of the following day with the

right wing of the Austrian army, and in the evening when that was defeated, began a march for Mantua, thirty miles distant; Mantua was reached early in the morning of the 16th in time to take part in the battle of *La Favorita*, in which the left wing of the Austrian army was destroyed.

Frederick the Great, in his brilliant operations in the autumn of 1757, with an army of 20,000 men decisively defeated a French force of 40,000 men on the field of *Rossbach*, near Halle, Germany, November 5, and then quickly marching to Silesia with an army of 40,000 attacked and decisively defeated an Austrian force of 70,000 men at *Leuthen* near Breslau on December 5. The two battle-fields are 225 miles apart in an air line.

XIV. *"In a war of march and maneuver, if you would avoid a battle with a superior army, it is necessary to intrench every night, and occupy a good defensive position. Those natural positions which are ordinarily met with are not sufficient to protect an army against superior numbers without recourse to art."*

It was by this means that *Lee* in 1864 and 1865, although greatly outnumbered, was able to resist the vigorous offensive tactics of Grant, until the Confederate communications were finally captured. The Turkish commander, Osman Pasha, in the Russo-Turkish war, and the Boer commanders in the South African war resorted to the same means to neutralize the effect of the numerical superiority of their antagonists.

XV. *"A general of ordinary talent occupying a bad position and surprised by a general with a superior force, seeks safety in retreat; but a great captain supplies all deficiencies by his courage, and marches boldly to meet the attack. By this means he disconcerts his adversary, and if this last shows any irresolution in his movements, a skillful leader profiting by his indecision, may even hope for victory, or at*

least employ the day in maneuvering. At night he intrenches himself or falls back to a better position."

The most famous commanders of the civil war acted in accordance with this maxim. Grant, although surprised by a superior force at *Shiloh*, boldly met the attack and offered such a resistance that he was able to hold his ground until reinforced by Buell. At *Chickamauga* in the second day's battle, Thomas was almost surrounded by the Confederate troops and entirely separated from his commander, Rosecrans, who had been swept off the field. He continued his stubborn resistance during the day, and at night was able to withdraw his troops to Chattanooga.

Lee was thus surprised on two occasions. In 1863, while he was encamped on the heights of Fredericksburg, Hooker succeeded in crossing the Rappahannock and Rapidan rivers above Fredericksburg by stratagem, and reached *Chancellorsville*, where he threatened *Lee's* flank and line of retreat. Instead of retreating, *Lee* decided on a counter-surprise and directed *Jackson* to march with his corps around the Union army to attack it in flank and rear. This bold maneuver was successful and caused Hooker's retreat. In 1864, while *Lee* was intrenched along the upper Rapidan, Grant succeeded in crossing the Rapidan below him and thus again threatened his line of retreat. He met this movement by marching rapidly to attack Grant in the hope that he might reach him before all the Union troops were across the river; this movement resulted in the battle of the *Wilderness*.

XVI "*Nothing is so rash or contrary to principle as to make a flank march before an army, especially when this army occupies heights at the foot of which you are forced to defile.*"

A flank march is one made in the vicinity of, and parallel or nearly so, to the enemy's line, so that the marching

troops are liable to be attacked on the flank of the column. In spite of this maxim, flank marches have often been made in the past and will be made in the future. In the civil war there were numerous instances of flank marches made by able commanders on both sides. In order to reach the enemy's communications both Grant and Sherman were obliged to make flank marches in 1864 and 1865. These marches were, however, usually protected by intrenching a corps between the marching column and the enemy. Before the battle of *Chancellorsville*, Jackson made his famous flank march from one flank to the other of the Union army, without taking any special precautions to protect himself from the enemy's attack. Such a movement would have been extremely dangerous had the Union army been more alert. Such a march was a favorite maneuver of Frederick the Great, and led either to a brilliant victory as *Leuthen*, or to a disastrous defeat as *Kollin*. As it is a dangerous maneuver, a flank march should be made with the greatest possible rapidity.

XVII. "*When an army is driven from a first position, the retreating columns should always rally sufficiently in the rear, to prevent any interruption from the enemy. The greatest disaster that can happen is the attack of the columns in detail before they are united.*"

In August, 1862, when it became evident to the Union authorities that they could no longer keep McClellan's army on the Peninsula, they decided to order it back by water and unite it with Pope's army on the Rappahannock. Pope's army was posted along this river in two groups; the larger comprised the corps of McDowell, Banks, and Sigel, and was near the crossing of the Orange and Alexandria railroad; the smaller, the corps of Burnside, was at Fredericksburg. Lee took advantage of this exposed position of Pope's army to defeat it before it

could be satisfactorily reinforced by McClellan. A successful turning movement, by which *Lee* preceded by *Jackson's* corps moved through Thoroughfare gap, compelled Pope to retreat in disorder and caused him to fight the unsuccessful battle of *Manassas* before he could properly unite his forces. His reinforcements from the Army of the Potomac reached him when in retreat, and could not be thoroughly incorporated in his army. This defeat caused him to retreat to Washington and allowed *Lee* to cross the Potomac river into Maryland. Had Pope been at once ordered to fall back to Bull Run, he would have occupied a safe position in which the two armies could have been united without interruption.

XVIII. *"Of all obstacles which cover the frontiers of empires, a desert is certainly the greatest; a chain of mountains like the Alps holds the second rank; rivers, the third."*

A line of operations across a desert should therefore be avoided if possible. Napoleon says of his ten days' march across the desert in 1799, from Egypt to Syria en route for St. Jean d'Acre:

"To cross a desert in summer is a very fatuiging and delicate operation on account of the heat of the sand, the scarcity of water, and the lack of shade. These are capable of destroying an army or of weakening and discouraging it more than one would imagine. In winter the hardships are slightly decreased. The difficulty of transporting the rations of an army are great at all times and are rarely satisfactorily overcome, yet these difficulties are multiplied twenty fold, when in addition, it is necessary to transport forage, wood, and water."

Although the desert route from Suakim on the Red Sea to Berber on the Nile is only 280 miles, and the Nile route from Cairo to the same place is about 1250 miles, Wolseley in 1884 selected the latter route in going to the relief of Gordon at Khartoum, notwithstanding the fact

that the navigation of the Nile above the second cataract is exceedingly difficult on account of falls, rapids, and shoals. A fleet of special boats was constructed for this expedition which were manned by Canadian voyageurs. The delays incident to the preparation and to the slow progress of the river transports led to the failure of the expedition. Only a small party reached Khartoum by steamer, to learn that the city was in the possession of the Mahdi and Gordon was killed.

Notwithstanding this failure, when Kitchener organized a later expedition to capture Khartoum, he followed the same route. He avoided the worst parts of the river by constructing a strategic railway, several hundred miles long, from the second cataract to Berber.

A sparsely settled region without railways offers many of the disadvantages of a desert for operations of a large force. The Russian territory between the frontier and Moscow was of this character when Napoleon invaded it.

“A mountainous country in which the enemy is prepared to make a serious resistance is a difficult country to traverse, and if possible should be turned. A line of operations should not pass through a mountainous country since an army cannot live there by requisitions; defiles are met at every step which are easily defended; the march is slow and difficult; columns of trained troops may be stopped, conquered, and defeated by untrained peasants; and the line of retreat is difficult and uncertain. Some ranges must be crossed to reach certain theaters of operations, as the Alps to reach Italy, but to unnecessarily encounter the dangers, difficulties, and fatigues of warfare in a mountainous region is contrary to the teachings of the art of war.”—*Napoleon*.

In the Russian campaign against Austria in 1914, the Russians succeeded in capturing the crest of the Carpathian mountains from Rumania as far west as the Dunajec river. The Russians did not, however, dare to send more than raiding troops across the passes.

In the Austrian campaign against Serbia in 1914 the Austrian army was defeated due to the difficulties of operating in a mountainous country.

A wide unfordable river is a serious obstacle, but Napoleon says:

“It is difficult to prevent an army equipped with a good pontoon train from crossing a river.”

By fortifying all the permanent crossings a river like the Rhine becomes an obstacle almost as difficult as a mountain range.

The Narew and Vistula rivers of Poland with their fortifications proved a serious obstacle to the operations of the German armies in 1914 and 1915.

Jomini* considered that the correct conduct of mili-

* Jomini, Henry, Baron (1779–1869), was born in the canton of Vaud, Switzerland. He entered the French Service in 1801 as an aid and secretary of Marshal Ney and remained with him until 1808, becoming his Chief of Staff. On account of the Marshal's jealousy of his influence in shaping military operations, he resigned his commission and prepared to enter the service of Russia. Napoleon, however, compelled him to remain in the French Service, and gave him the rank of brigadier general. He declined to take an active part in the campaign of 1812, and was made Governor of Wilna; but in 1813 he again resumed his position on Ney's staff. As further promotion was denied him in the French Service, he entered the Russian Service as lieutenant-general, but declined to take part in the invasion of France. He returned to Paris in 1817, as a military writer, but re-entered the Russian Service in 1826 and took part in the campaign of 1828. He afterwards organized the Military Academy of St. Petersburg, and superintended the military studies of the heir apparent. Among his military works are:

“*Traité des grandes opérations militaires*,” 1804.

“*Principes de la stratégie*,” 3 Vols., 1818.

“*Histoire critique et militaire des campagnes de la Révolution de 1792 à 1801*,” 15 Vols., 1819–1824.

“*Vie politique et militaire de Napoléon*,” 1827.

“*Précis de l'art de la guerre*.”

Most of his works have been translated into English.

tary operations might be embraced in the following maxims:

XIX. *“Throw by strategic movements, the mass of your army, successively, on the decisive points of a theater of war, and also upon the communications of the enemy as much as possible without compromising your own.”*

By a decisive point, Jomini meant a strategic point, whose capture will have a very important effect upon the political or military situation. In our civil war, such points were Richmond, the capital of the Confederacy; Petersburg, whose capture carried with it the fall of Richmond; Vicksburg, the last stronghold of the Confederacy on the Mississippi river; and Nashville, Chattanooga, and Atlanta, the great civil centers on the Louisville-Chattanooga-Savannah railway, which bisected the territory east of the Mississippi, and was the principal line of invasion between the Mississippi river and the Appalachian mountain system.

Operations against an enemy's line of supply or retreat are the most common operations of warfare, as there is no surer method of effecting the destruction of a hostile army than that of placing a superior force on its line of supply and retreat and compelling it to assume the offensive to open this line. The difficulty lies in reaching this line without at the same time exposing the line of operation of the attacking army. The safest method is undoubtedly to assume a line of operations if possible which intersects the enemy's line of supply well in rear of his army and is as nearly at right angles to his line of supply as possible.

In 1800, the Austrian army of Italy was investing Massena in the fortress of Genoa, forcing the passes of the Apennines and Maritime Alps west of that place against Suchet, and guarding the main line of the Alps between France and Italy. Its lines of supply and retreat

were the roads following the Po valley to the Italian quadrilateral on the Mincio and Adige rivers. To relieve the French forces in Italy, Napoleon formed the *Reserve Army* in Switzerland about Lake Geneva and made his plan to cross the Alps rapidly, and seize the line of the Mincio river in the rear of the Austrians. He would thus compel the Austrians to fight for their communications. He succeeded in carrying out his plan and then from the line of the Mincio advanced to meet the Austrian army by moving on its own lines of retreat. The two armies met on the plains of *Marengo* near Alessandria, where the Austrian army was defeated, and, as a consequence, was forced to evacuate Italy as far eastward as the Mincio river.

In 1805 in a similar manner Napoleon captured an Austrian army under *Mack* which had taken possession of Ulm in Bavaria. He concentrated a much superior force on the Rhine and Main line of Strassburg, Mannheim, Wurzburg, and then by rapid marches moved it to Augsburg, Donauwerth, and Ingolstadt in Bavaria. He thus placed himself on the Austrian lines of supply and retreat which followed the valley of the Danube and compelled *Mack* to surrender the greater part of his army.

It is not often, however, that such a choice of lines of operation is available for a commander. Ordinarily he is obliged to work around the flank of the opposing army by making what are practically flank marches. It was thus that Grant worked his way around *Lee's* right flank in the campaign of 1864-1865, that the German army succeeded in investing Bazaine's army in *Metz*, and the Russians, Osman Pasha in *Plevna*.

If not always successful in destroying the defender's army, operations threatening his lines of supply and retreat have the effect of compelling him to retreat and

vacate the lines he has been occupying. It was in this manner that Sherman in 1864 forced *Johnston* from the vicinity of Dalton, Georgia, to Atlanta; that *Bragg* forced Buell from the vicinity of Chattanooga to the Ohio river; and that *Bragg* was forced from the line of the Duck river in Tennessee to the field of Chickamauga, Georgia.

XX. "*Maneuver to engage fractions of the hostile army with the bulk of your own forces.*"

The second maxim is applicable only when the enemy divides his force so as to operate on double or multiple lines; it also requires an offensive army which is exceedingly mobile as compared with that of the adversary. The army of Napoleon in his earlier campaigns and that of Frederick the Great fulfilled these conditions. When the strength of armies is expressed in hundreds of thousands, such mobility is no longer possible. The difficulty of supplying, camping and marching large masses is too great to admit of their being kept in a concentrated formation for any length of time. The plan of the Austrians in 1866 was to prevent the union of the Prussian First and Third armies moving from Saxony, with the Second moving from Silesia, and to defeat them in detail; they were unable to compass it on account of the difficulty of operating quickly with an army of 260,000 men.

The plan of General Kuropatkin in the Russo-Japanese war was to operate from his central position of *Liaoyang* and prevent the union of the army of *Kuroki* with the combined armies of *Oku* and *Nodzu*; he was unable to accomplish it because of the lack of mobility in the Russian army

As previously stated, the *Tannenberg campaign* by Hindenberg in East Prussia in 1914 was a successful campaign carried out on these lines.

The following extracts are from the writings of Field Marshal von Moltke between 1866 and 1870.

XXI. *“Simple maneuvers consistently carried out are the most certain to attain their end.”*

“To grasp with ready tact the ever-changing situation, and to execute the simplest and most natural course of action with firmness and circumspection, is what counts in war. In this manner war becomes an art, one which is served by many sciences. These sciences will by no means make a military leader, but his deficiency in them must be supplied by the proficiency of other men.

“A too great concentration of troops is a serious error. The concentrated army is difficult to supply, and cannot be placed under cover; it can march and maneuver only with difficulty, cannot exist for prolonged periods of time, and is suitable only for battle. It is therefore a mistake to concentrate the army for any but a very definite purpose, and that purpose, to control the combined strength of the army for decisive battle. *For this battle one can never be too strong, and therefore the very last battalion must be brought on the battle-field.*

“In moving forward, however, to attack the enemy, an army must not move on a single road or on a few roads in a concentrated formation. *To preserve the separation of the columns as long as possible, and to concentrate at the right moment for decisive battle,* is the great problem in conducting war with large armies.

“No calculation of space and time can guarantee results, where accidents, mistakes, and illusions form factors of the problem. Uncertainty and danger of miscarriage of combinations attend every step to the objective, and only when Fate is not wholly unfavorable can the goal be reached; in war everything is uncertain, nothing certain, and only with difficulty can great results be attained in any other way than by following the principles above described.

“The character of modern warfare is marked by a striving for a more rapid decision by force. The strength of armies, the difficulty of supply, the expense of a state of

war, the interference with trade, manufacture and agriculture, the complete organization of armies and their ready mobilization, all press for a rapid ending of the war. Minor combats have therefore little effect except to pave the way and make possible the great decisive battles. The most powerful force in war is victory in decisive battle. Victory alone breaks the will of the enemy and compels him to submit himself to our will. Neither the occupation of a stretch of territory nor the capture of a fortified place, but only *the destruction of his armed force is as a rule decisive. This therefore is the most important objective in war.*"

The following extracts were written by him after the Franco-German war:

"National policy makes use of war to attain its ends; its influence is especially great at the beginning and at the end of the war, but at any time during the progress of a war it may step in to increase or decrease the demands made upon the opposing belligerent state. Because of this uncertainty, strategy must always aim at the highest results which the means provided make possible. Strategy should work hand in hand with national policy for the aims of the latter, but otherwise should be entirely independent.

"The first military task of strategy is the preparation of war power and the first concentration of the army. In these operations many varied political and geographic questions must be considered. An error in the primary concentration of the army can hardly be corrected during the progress of a campaign. But these matters, the preparation of the troops for war and the organization of the transport systems, can be considered long before the outbreak of war and should be commensurate with the object of the military preparation."

In the campaign of 1914, as a result of the error in their primary concentration, the French armies were obliged to fall back from the Meuse to the Marne.

"The next task of strategy, the practical employment of the means provided in military operations, is a different

problem. Here our will soon meets with the independent will of the enemy. We can limit the free exercise of his will, if we are ready for and are resolved to take the offensive, but we can conquer his will only through the use of tactics, by means of battle.

“The material and moral consequences of each great battle are so far reaching, that ordinarily an entirely modified situation results from it—a new basis for new measures. No plan of operations reaches with any certainty beyond the first engagement with the principal force of the enemy. Only a layman would expect to see in the execution of a campaign the consistent carrying out of a primary idea, entertained in advance, carefully considered in all its details, and steadily pursued to the end. Of course, the commander keeps his main objective constantly in view, and steadily pursues it through all the varying circumstances of the campaign, but the path by which he hopes to attain the objective cannot be clearly seen far in advance. He is, in the course of a campaign, compelled to make many decisions because of situations which could not be foreseen. It is necessary in many instances to penetrate the fog of uncertainty surrounding the commander-in-chief, to rightly estimate the known facts, guess at the unknown, make a prompt resolution, and carry it out with force and without hesitation.

“In calculating with a known and an unknown quantity, our own and the enemy’s will, other factors interfere which cannot be foreseen; weather, sickness, railway accidents, misunderstandings, illusions, in short all the influences which may be called chance, fate or Providence, but which either shape or control man’s destiny.

“And yet notwithstanding all this, the conduct of the war has not become mere chance. The theory of probabilities will show that all these casualties as often injure or profit the one side as the other, and that the commander who in every instance makes, if not the best, at least a *sensible decision*, has always a prospect of reaching his objective. It is evident that theoretical knowledge will not suffice, but the attributes of mind as well as the character must be given free scope, restrained of course by

military education and guided by experience either derived from history or from life itself.”

General Remarks.—The principles of strategy are simple and are easily comprehended by any student of the art of war; the execution of these principles under the conditions and with the means employed in war are exceedingly difficult and require an *educated* and *experienced* commander of a *strong character*.

To say that a bridge should be strong enough to safely carry the greatest load to which it is liable to be subjected, is the statement of an axiom. To design, construct, and erect such a bridge under all the varying conditions of site is no easy task even if the engineer has been well instructed in the principles of physics, and in the art of designing, has had extended mechanical experience in erection, and has the use of well-equipped workshops and a skilled force of workmen. If he is compelled to utilize inferior materials, tools, or workmen, the structure when completed may fail to fulfill the simple condition above stated.

The theory and practice of the art of war are subject to similar conditions. To say that the commander should concentrate all of his available forces on the day of decisive battle, is also a statement of a self-evident fact, yet it has been emphasized as a principle of strategy by Napoleon, Moltke, and many other military leaders and writers. The difficulty, however, does not lie in *understanding* this principle, but in its *execution*. In Moltke's writings given above, he points out some of the difficulties met with in concentrating, at the proper moment, a large army for decisive battle. The most highly educated and experienced commander would find it a difficult operation with a large command even were the forces well organized, trained and equipped. In the actual operations of war,

the practical execution of this principle may be rendered still more difficult by the ignorance, inexperience, or want of moral force in some of his principal subordinates, by the lack of proper organization and training of his troops, by unfavorable conditions in the topography and in the weather. It is easy to conceive a combination of circumstances which would baffle the most experienced commander. Napoleon lost the battle of Waterloo because he failed to concentrate his whole force on the battle-field on the day of battle. For nearly a century military writers have been discussing this event and endeavoring to fix the responsibility for it. No definite satisfactory conclusion has ever been reached by anyone, and it can only be said that on this occasion the force of circumstances was too difficult to be overcome by the greatest commander in history. His own health and mental condition, the errors of his generals, the rawness of his troops and their lack of thorough training, the topography of the country and of the battle-field, and even the weather contributed to his defeat.

What has been said of this one principle applies equally well to the others. They are only statements of nearly self-evident truths; as has been shown by historical examples, they cannot be violated with indifference, and they can only be carried out with difficulty. Clausewitz* says on this point:

* Clausewitz, General Carl von (1780-1831). Entered the Prussian Army in 1792 and served in the campaigns of 1793-4 on the Rhine. From 1801-1803 in the Military School at Berlin. In the campaign of 1806, aid-de-camp of Prince Augustus of Prussia, wounded and taken to France as a military prisoner. On his return, on the staff of General Scharnhorst and military instructor of the heir apparent. In 1812, in the Russian Service aid-de-camp in Prince Wittgenstein's Army. In 1813, Russian officer at General Blucher's headquarters. In 1814, Chief of Staff of a Russo-German

“In strategy everything is very simple, but not on that account very easy. Once it is determined from the relations of the state, what should or may be done by war, then the way to it is easy to find. To follow that way, however, in a straightforward manner, to carry out the plan without being obliged to deviate from it a thousand times by a thousand varying influences requires besides great strength of character, great steadiness of mind; out of a thousand who are remarkable, some for penetration, some for intellect, some for boldness and strength of character, perhaps not one will combine in himself all those qualities which are required to raise a man above mediocrity in the career of the general in command.

“It may seem strange, but those who know will admit it is a fact beyond dispute that much more strength of will is required to make an important decision in strategy than in tactics. In the latter we are hurried on with the movement; a commander feels himself borne along by a strong current against which he dares not contend without the utmost destructive consequences, he suppresses the rising fears and boldly ventures further. In strategy, where all goes at a slower rate, there is more time allowed for our own apprehensions and for those of others, for objections, remonstrances and misgivings. Since we do not actually see things in strategy as we do at least half of them in tactics with the living eye, but everything must be conjectured and assumed, it is difficult to form strong convictions as a basis for strategic action. The consequence is that most generals when they should act remain stuck fast in bewildering doubts.”

For the solution of the manner in which strategic operations should be executed, we must look largely to tactics,

Army Corps. In 1815, Chief of Staff of Thielman's Corps at Waterloo. In 1818, Major General and Director of the Military School at Berlin. In 1830, Inspector of Artillery at Breslau and Chief of Staff of Army of Observation on Polish Frontier. His treatise on “War” in three volumes is considered in Germany the standard work on the subject, and is often quoted in the writings of Field-Marshal Von Moltke.

particularly to the tactics of an army on the march and in bivouac or camp. Here are developed the details which are essential to make a piece on the strategic chess-board an effective element in the game. Strategy and tactics are largely dependent on each other. The most that strategy alone can effect is to compel the enemy to evacuate a strong position or a portion of the theater of operations. Either operation may be rendered valueless if the first succeeding battle is won by the enemy. Tactics alone can only win battles; if no strategic advantage follows, the fruits of victory may extend no further than the battle-field while the actual losses may exceed those of the enemy. It is only when the battles are won in carrying out a correct strategic plan that results are obtained by victory, important enough to offset the losses incurred.

In the opening operations of the Franco-German war the First and Second German armies operated against the French *Army of Metz*; four successive battles were fought between the two belligerents, all of which were German victories. The first was *Spicheren*, in which the German losses were 4870 men, and the French 4080; its strategic effect was to open the road for the German advance. The second was *Borny or Columbey-Nouilly*; the German losses were 4910, the French 4190. It effected the strategic object of delaying the retreat of the French army. The third was *Mars-la-Tour*; the German losses were 15,800, and the French 16,930. It effected the strategic object of cutting off the retreat of the French army under Marshal Bazaine towards Chalons, to effect a junction with that of Marshal MacMahon. The fourth was *Gravelotte-St. Privat*, in which the German losses were 20,130, the French 12,270. It forced the French army to retreat into Metz, where it was invested and finally cap-

ture. In these four battles the German losses exceeded those of the French by about 8000 men; the success of the strategic plan was, however, worth a much greater loss, as it led eventually to the destruction of the entire French army of nearly 175,000 men. Tactics may therefore be regarded as the powerful ally of strategy which, in the offensive, crushes the resistance that an enemy may oppose to the execution of a strategic plan, and which in the defensive, interposes its power, to defeat his strategic operations.

Strategic operations are characterized by the great diversity of the plans and movements by which the same object has been accomplished in different campaigns. Operations for the purpose of turning the flank of an enemy and threatening his line of retreat have been repeated numberless times and yet no two commanders have had exactly the same problem to solve in two different campaigns. The differences in the composition of the opposing armies, in the topographical features and in the lines of communication of the theater of operations, compel each commander to solve this problem in a special way in every new campaign. Strategy can therefore teach only general principles; the application of these principles to each specific case is the field of military talent and genius.

CHAPTER V

THE OFFENSIVE AND DEFENSIVE STRATEGY

The Offensive.—The offensive in strategy is usually resorted to by a commander because at the moment he has confidence in the superiority of his army in numbers, organization, or morale. The offensive in strategy does not necessarily imply either the offensive in war or in tactics, although as a rule the three go together. The Revolutionary war was a defensive war on the part of the colonies, which were simply resisting the power of the British Government to maintain its armies and enforce its will in the colonial territories. The Yorktown campaign, which terminated that war, however, was an offensive campaign on the part of Washington, who relied on the power of the allied Colonial and French armies to destroy the army of Cornwallis wherever it could be found. The Virginia campaign of 1864–1865 was an offensive one on the part of Grant, yet in its first battle, the *Wilderness*, he was compelled to defend himself from the attacks made by *Lee*.

Advantages and Disadvantages of the Offensive in Strategy.—The advantages resulting from the offensive are: the morale of the army is improved, mobility of movement is secured, surprise is made possible, and the operations may be planned in advance. The confidence which the commander has in himself and his army, implied by his assuming the offensive, is communicated to his troops and improves the morale of the army. The soldier in ranks knows little more about the military movements

of the army than the direction of march. If this is in the direction of the enemy or forward, he associates the movement with the defeat of the enemy, and is correspondingly elated; if the movement is to the rear, he believes his own army has met with defeat and is correspondingly depressed. Only after a commander has proved himself a successful general in the field, will soldiers follow him with the same implicit confidence in a retrograde as in a forward movement. This improvement in the morale of the army reacts on its commander and gives him more confidence in his own judgment and plans. The army and its commander are further strengthened by the approval of public opinion and the press of the country, who naturally urge on and approve every offensive operation.

The commander acting on the offensive makes the plan of campaign; this gives him the opportunity of calmly weighing the advantages of the various theaters, lines of operation and other strategic elements which may be utilized to reach his objective, and enables him to select the plan which offers the greatest advantages to himself or the least to his adversary. It is undoubtedly a great advantage to have a definite plan to work on, even if this plan is frequently modified by changes in the military situation. In 1864 Grant, having once decided to operate around *Lee's* right flank as long as the latter remained in front of Richmond, was never in doubt as to what he should do next. From the Rapidan to the Wilderness, from the Wilderness to Spottsylvania, from Spottsylvania to North Anna, from North Anna to Cold Harbor, from Cold Harbor to Petersburg, and from Petersburg to Appomattox were only so many stages in the movement originally planned. If the means are sufficient to carry on a rapid and progressive offensive campaign, the power of initiative may remain with the attacking army through-

out the campaign and give it a decided advantage. This was notably the case in the operations of the German army against the French in 1870, in the operations of the Japanese army in Manchuria in 1904-1905, and in many of Napoleon's campaigns.

An army on the offensive has greater mobility than an army on the defensive, since the latter is at the beginning of a campaign tied down to the defense of some special position or line, while the army on the offensive can operate in any direction. This advantage enables the invader to surprise the defender by rapid and unexpected movements which are difficult to meet. Such movements usually open every campaign as may be seen from an examination of any of the campaigns of our own or foreign wars. The advantages gained by initial surprise may be decisive as to the force attacked, as in Grant's Donelson campaign, in Napoleon's campaigns of 1800, 1805 and 1806, and in Roberts' campaign against the Boer Army of General Cronje.

The principal disadvantage of the offensive in campaign lies in the rapid reduction of the number of troops at the army front due to the wearing out of the men and to the detachments left behind to guard the communications; yet it is the troops at the front on whom the commander must rely for the tactical success that decides the campaign. This reduction is largely influenced by the character of the troops, the condition of the roads and the weather, the character and length of the lines of communication, and the hostility of the country through which the army moves. The reduction of Napoleon's army in its march to Moscow has been given; the Russians in their advance on Constantinople in 1877-78 fared no better. They crossed the Danube river with about 450,000 men and reached Constantinople with only about

100,000; of these less than 50,000 were effective troops. These campaigns were conducted without the aid of railways over difficult theaters of operations.

The reduction is less if railways form the lines of communication. When Sherman reached Atlanta, the departments of the Cumberland, Tennessee, and Ohio, which formed his territorial division, contained 197,000 effective men present for duty; his effective force at Atlanta, however, he states numbered 82,000 men. He considered this force too weak to extend the lines of communications any further, and he therefore abandoned his communications and lived on the country in his march from Atlanta to Savannah, where he opened a new base and a new line of operations for his Carolina campaign.

The battle of the *Marne*, 1914, was lost by the Germans through the weakening of the German armies by the detachments left behind to occupy Belgium and northern France and to invest the fortified places.

Another disadvantage of the offensive is that each advance of the army brings it into a country whose topographical and military conditions may be more or less unknown. The commander is constantly called upon to plan strategic and tactical operations upon topographical and military data much of which is derived from incorrect maps, from fragmentary reports of scouts, and from the inhabitants of the country, who may purposely or through ignorance give false information. Under these circumstances, the best planned operations are liable to miscarry.

This was one of the difficulties encountered by the Northern armies in the civil war, and the British armies in South Africa. Neither country had been accurately mapped, and it was difficult not only to plan marches, but also to determine where the enemy would probably

make his defense. When McClellan planned his Peninsula campaign, he made use of a map which showed no natural line of defense between Fortress Monroe and Richmond. He knew there were batteries commanding the river at Yorktown, but he assumed that this place could be easily invested on the land side. He was therefore much surprised on April 5, 1862, when he learned from his corps commanders that the advance of the army was stopped by an unfordable stream commanded by Confederate batteries. It was the Warwick river, whose direction had been incorrectly shown on the map. In front of this river McClellan's army was delayed for nearly a month.

Passage of Rivers.—A wide, unfordable river, which intersects the line of operations of an army, is always a matter of serious consideration to the commander, especially if the hostile army is in the vicinity. If he crosses the river on permanent bridges, these become narrow defiles on his lines of communication not easily traversed if compelled to retreat; if he crosses on military bridges he exposes himself to the additional danger of having the bridges swept away or rendered useless by an unexpected flood. Even if the defender does not dispute the passage, it is unsafe for the invader to cross over and bivouac on the other side, so long as the defender occupies a strong position within striking distance of the point of crossing. The invader is safe only when he has moved far enough away from the river to have absolute freedom of movement, or occupies a position on the defender's flank and is prepared for a flank attack. The advantages which a river offers as a line of defense, and the number of such rivers in nearly every theater of operations, makes the passage of rivers one of the most common of offensive strategic maneuvers.

Unless the defender's army is demoralized by defeat or the offensive army is greatly superior in numerical strength, a commander will not ordinarily force a passage in the immediate front of the enemy. A field of battle between an intrenched enemy and an unfordable river offers no advantages and many serious defects.

The Union army at *Fredericksburg* and the British forces on the *Tugela* and *Modder* suffered defeat in operating between a river and an intrenched army numerically weaker. If the defending force receives strong reinforcements during the battle so that its commander feels strong enough to assume the offensive, the assailant's army is in danger of practical annihilation; such was the fate of the Russian army at *Friedland* in 1807. The passage of a river in the immediate presence of the enemy in force is advisable only when he is demoralized by defeat, as the crossing of the *Adda* at *Lodi* by Napoleon in 1796, or when the defender attempts to cover too many points of crossing and thus distributes his army over a great length of river. The assailant may then find it advisable or even necessary to force a crossing at one of the points, by the employment of great numerical superiority. The advantage which the assailant gains by having a concentrated force on the enemy's side to operate against his scattered detachments, would warrant the forcing of the crossing even at a considerable loss.

The more common method is to effect the passage by surprise or by stratagem. A crossing by surprise is effected without a previous demonstration; a passage by stratagem is effected by threatening a passage at some other point than that selected for the real one. The former requires no division of the offensive army, the latter requires such division. The success of both movements depends upon the secrecy and celerity of the movement.

The crossing of the Rapidan by the Army of the Potomac under General Meade in 1864 was effected by surprise at *Germanna* and *Ely* fords on the Rapidan river, a short distance below the encampments of the Confederate army, which were around Orange Court House south of the Rapidan river.

“On the 2d of May the order for the movement of the Army of the Potomac was issued.

“The movement began promptly at midnight of the 3d, Major-General Sheridan, with two of his cavalry divisions, leading the two infantry columns, one of his divisions, Torbert’s, being left to cover the rear of the army. A canvas and a wooden pontoon bridge were laid at *Germanna* ford, the same at *Ely* ford, and a wooden pontoon bridge at *Culpeper Mine* ford, five bridges in all, the river being about two hundred feet wide.

“The II corps, preceded by Gregg’s cavalry division, crossed at *Ely* ford, and moved to *Chancellorsville*, followed by the reserve artillery. The V corps, preceded by Wilson’s cavalry division, and followed by the VI corps crossed at *Germanna* ford, and moved to *Wilderness Tavern* at the intersection of the *Germanna* plank road, by the *Orange Court House* and *Fredericksburg* pike. The head of the VI corps halted three miles from *Germanna* ford, the rear at the ford.

“The trains, except those known as the fighting trains which accompanied the troops, crossed at *Culpeper Mine* ford and *Ely* ford. They were covered by the cavalry, and had an infantry guard of 1200 men from each of the infantry corps.

“Gregg’s cavalry moved to the vicinity of *Piney Branch Church*, throwing out reconnoissances (to the east and south) on the *Pamunkey* road and towards *Spottsylvania Court House*, *Fredericksburg* and *Hamilton’s Crossing*. Wilson’s cavalry moved to *Parker’s store*, on the *Fredericksburg* and *Orange Court House* plank road, throwing out reconnoissances to the right (or west) on the *Orange* pike and plank roads, and on the *Catharpin* and *Pamunkey* roads.

“The head of the II corps arrived at Chancellorsville at 10 A. M. on the 4th, and the whole corps, with the trains moving with the troops, was at the halting place designated about one o’clock. The whole of the V corps was up to its position by two o’clock. Each of these corps had marched more than twenty miles, and both had assisted in laying the wooden pontoon bridges at their crossings of the Rapidan, and had improved the roads leading up the steep river banks. The VI corps had marched more than sixteen miles, but following the V corps was later in getting to its halting ground for the night.

“The canvas bridges were taken up on the 4th, and joined the corps to which they belonged. The wooden bridges were left for the trains of the IX corps.”

Respecting this operation Grant says:

“This I regarded as a great success, as it removed from my mind the most serious apprehensions I had entertained, that of crossing the river in the face of an active, large, well-appointed, and ably commanded army.”—*Humphreys*.*

The passage of the river was not disputed, as the fords were watched only by small cavalry pickets.

The crossing of the Rapidan river at the same points was effected by stratagem by the Army of the Potomac under Hooker in 1863.

“When the campaign of Chancellorsville commenced, the Army of the Potomac was posted on the left bank of the Rappahannock, opposite Fredericksburg, among the Stafford Hills. At the period referred to, Hooker had under him a force of about 124,500 men of all arms, 11,500 of which were cavalry. On the opposite side of the river, the *Army of Northern Virginia*, under *Lee*, numbered, according to their official reports, about 62,000 men, 3000

* The Virginia campaign of '64 and '65.—Andrew A. Humphreys, Chief of Staff of the Army of the Potomac, Commander of II Army Corps, Chief of Engineers U. S. Army, Brevet Major-General U. S. Army.

of whom were cavalry; but the difference was amply compensated by the wide river in front of the enemy, and the fact that every available point and ford was well fortified and guarded.

“Hooker’s plan of campaign was simple, efficacious, and should have been successful. The rebels occupied a long line and could not be strong everywhere. He resolved to make a pretense of crossing with three corps, under Sedgwick, below Fredericksburg, while the remaining four corps under Slocum made a detour and crossed the Rappahannock, twenty-seven miles above, at Kelly ford. The latter were then to march down the river against the left flank of the rebel army and re-open Banks ford a few miles above Fredericksburg; thus re-uniting the two wings of the army and giving a secure line of retreat in case of disaster.

“When this was accomplished it was proposed to give battle in the open country near the ford, the position there being a commanding one and taking the whole line of rebel works on the heights of Fredericksburg in reverse. Owing to his great preponderance of force Hooker had little reason to doubt that the result would be favorable to our arms.”—*Doubleday*.*

“On the 27th of April the XI and XII corps were set in motion for Kelly ford, twenty-five miles up the Rappahannock, where they concentrated on the evening of the 28th; the V, by reason of its shorter marching distance, moving on the 28th. The object of the expedition was unknown to the corps commanders until communicated to them, after their arrival at the ford, by the commanding general in person. The XI corps crossed the Rappahannock, followed in the morning by the XII and V corps, the two former striking for the Germanna ford crossing of the Rapidan, the latter for Ely ford lower down the same stream. Both columns, successfully effecting crossings with little opposition from the enemy’s pickets, arriving that evening, April 30, at the point of concentration, Chancellorsville.

* Chancellorsville and Gettysburg.—Abner Doubleday, Brevet Major General U. S. Army.

“In order to confound *Lee*, orders were issued to assemble the VI, III, and I corps under Sedgwick, some three miles below Fredericksburg on the left, before daylight on the morning of the 29th, and throw two bridges across and hold them. This was done under a severe fire of sharpshooters.

“Two divisions of the II corps marched on the 28th for Banks ford on the Rappahannock, four miles to the right; the other division, Gibbon’s, occupying Falmouth, near the river bank, was directed to remain in its tents, as they were in full view of the enemy, who would readily observe their withdrawal.

“On the 29th the two divisions of the II corps reached United States ford on the Rappahannock, ten miles from Fredericksburg and opposite Chancellorsville; it was held by the enemy in force, but the advance of the right wing down the river uncovered it, whereupon a bridge of pontoons was thrown across and the corps reached Chancellorsville, where the commanding general arrived the same evening, establishing his headquarters at Chancellor House, which with the adjacent grounds is Chancellorsville. The III corps joined on the morning of May 1. During the 29th and 30th the enemy lay at Fredericksburg observing Sedgwick’s demonstrations on the left, entirely unconscious of Hooker’s successful crossing of the right wing until midday of the later date.”—*Couch*.*

The point of concentration was in a thick woods and too near the river. Had the corps been pushed at once into the open country beyond the woods, the movement would have been entirely successful. As it was, the army was attacked in its cramped position on the evening of May 2 and again on May 3, and suffered a tactical defeat which led to its withdrawal to the north bank of the Rappahannock.

If the main river is parallel to the line of operations of the invader, and the defender takes up a position in rear

* Battles and Leaders of Civil War, Vol. III. The Chancellorsville Campaign.—Darius N. Couch, Major-General U. S. Volunteers.

of one of its perpendicular tributaries, he will probably rely on the main river to protect his flank. In this situation the invader has the choice of two operations: he may either threaten a front attack and thus cover a movement to cross the main river in the defender's rear, or he may threaten to cross the main river in the defender's rear and after the latter has weakened his front, force a crossing there. The former method was employed by Napoleon against the Austrians who were defending the Ticino river in 1796; the latter was employed by the Austrians under Radetsky in 1849 against the Sardinians, who were also guarding the Ticino. He threatened to cross the Po above the junction, and when they had weakened their front forced a crossing at Pavia.

Passage of Mountain Ranges.—The passage of a mountain range is a more difficult operation than the passage of a river, since with a pontoon train an army can cross a river at any point, while the mountain range can be crossed only at the passes. The actual operation of laying a pontoon bridge and crossing a river with a large force is a matter of hours, while an army may be days in traversing the passes of a mountain range. An army which debouches from a mountain range also has difficult defiles in its rear, and if these are in a hostile country, its retreat after defeat is certain to be attained by heavy loss. It is fortunate for the army that must cross a range of mountains, that the defense of the range is attended by difficulties which makes the success of such an offensive operation more probable than the topographical features would seem to indicate. The method of effecting a passage through a range of mountains is similar to that of crossing a river. If the enemy is retreating and is dispirited, the assailant may follow on the heels of the retreating force as Napoleon followed the Archduke Charles through the

eastern Alps in 1797, from Italy to the vicinity of Vienna. Weak detachments may be brushed aside as Suwaroff brushed aside those of the French who were guarding the Saint Gothard pass in 1799.

The passage may be effected by surprise. Napoleon thus crossed the Alps in 1800 and the Crown Prince of Prussia the Giant mountains between Silesia and Bohemia in 1866, before the Austrian forces were prepared to dispute the operation.

The passage may be effected by stratagem. When the Russian armies crossed the Danube near Sistova in the war of 1877-78, a strong advance guard of about 12,000 men under Gourko was pushed at once to the front to seize the passes in the Balkans. The principal of these passes was *Shipka* pass held by 4000 to 5000 men. Having learned that there were other passes to the east not held in force, Gourko decided to leave one regiment at the northern end to watch the pass until relieved by the other troops, and with the remainder to cross the mountains by one of the minor passes and attack *Shipka* pass in rear, while the other forces attacked it in front. Through unexpected delays on the march, Gourko did not arrive in position on the day set for the attack, consequently the Turks were attacked on successive days from the north and south. Although they repulsed both attacks, they were so demoralized by seeing their retreat cut off that the Turkish force evacuated the position and scattered through the mountains. After the fall of *Plevna*, in the dead of winter, Gourko also opened the *Orkhanie* pass, by demonstrating against the front and at the same time turning the flank of each defensive position intrenched by the Turks.

Diversions.—Diversions or detachments made from an army to effect minor results are of little use in offensive operations. The necessary detachments for the defense

of the communications, and for the masking or reduction of fortified places left in rear or on the flanks of the advancing army, reduce its strength to such an extent that further subdivision is inadvisable. The principal army of the defense being the main objective of the attacking army the whole effort should be directed to its destruction. If the defender resorts to diversions it may be occasionally necessary to meet them, but as a rule it is better then to press the main attack while he is weakened by his detachments.

Maritime Expeditions.—The special difficulties which must be overcome in maritime expeditions are the transport of the army to its theater of operations, the capture and intrenchment of a secondary base, the operation from a narrow base, and the protection of the maritime line of communications. These expeditions require the combined action of the land and sea forces of a nation. This introduces another difficulty, as the two services have no common head well versed in the art of war of both services, and do not always work in harmony. To convey the army safely to its new theater of operations and to protect the ocean lines of communications is the function of the navy, which also cooperates in the capture of the secondary base. These matters may be dismissed here with the observation that a maritime expedition over ocean lines of any considerable length is a hazardous operation unless the state assuming the offensive is vastly superior in sea-power. The British navy, the best in the world at that time, was unable to secure the retreat and prevent the surrender of Cornwallis at Yorktown; and Napoleon, who was the most able military commander in history, never felt quite strong enough to cross the English channel and invade the country which gave him most trouble and finally accomplished his ruin.

If the seapower of the enemy can be practically neglected as in our Mexican and civil wars, and in the Spanish-American war after the naval fight at Manila and the blockade of the Spanish squadron at Santiago, the strategic problem is limited to the capture and intrenchment of the secondary base and the operations from it.

The selection of the base is a matter of considerable importance, as it influences all military operations. It should be capable of being easily defended, have good lines of operation leading from it, be as near as possible to the main territorial objective, and have all the requisites of a good harbor. In our Mexican war the harbor of *Vera Cruz*, which was the base of General Scott's operations, very well fulfilled all the above conditions. In the Spanish-American war it was impossible to find a satisfactory base from which to operate against Santiago. The base adopted, *Siboney*, had none of the requisites of a good harbor, being an open roadstead with a very rocky shelving coast and great depth of water, and connected with the objective by narrow trails. However, it had the great advantage of being only ten or twelve miles from Santiago. It might easily have been organized for defense, had its protection by intrenchments been thought necessary by the commander of the American land forces. In the Phillipine Islands the naval harbor at *Cavite*, a few miles from Manila, was the base of operations against that place.

It is almost impossible for the defender to prevent the invader from making a landing upon some point of an extended coast line, since the invader has the advantage of surprise and it is impossible for the defender to occupy with a strong force every point along the coast. During the civil war the Union troops, assisted by the navy, had no great difficulty in landing at Hatteras, at Port Royal

and at New Orleans. To hold the landing place and to advance from it, the invader must be able to concentrate there a force superior to that of the enemy. The landing place need not be the port designated as the final base; this may be secured by subsequent land operations. When the final base is secured it should be thoroughly protected and supplied, so as to become a safe harbor of refuge in case the army meets defeat in its strategic operations. Wellington was protected by his lines of *Torres Vedras* in Portugal when defeated in the field and compelled to retreat, by the superior French army under Massena in 1810. The contracted base, which is always objectionable, may be increased as the operations progress by the occupation of other seaports besides the one first captured.

The Defensive.—The defensive in strategy is resorted to by a commander because at the moment he lacks confidence in his army or in himself. The former may be due to the inferiority of his army, in numbers, organization, or morale. Like the offensive, the defensive in strategy does not necessarily imply the defensive in war or in tactics, although the three do usually go together.

The civil war was an offensive war on the part of the National Government to suppress a rebellion against its authority in the Confederate states. The campaign beginning after *Chancellorsville* and closing at *Gettysburg* was, however, a strictly defensive campaign on the part of the Army of the Potomac. The *Chancellorsville* and *Peninsula* campaigns were defensive campaigns on the part of the Confederates; the battle of *Chancellorsville* and all the battles fought around Richmond in these campaigns were, however, offensive battles on the part of the *Army of Northern Virginia*.

The Advantages and Disadvantages of the Defense.—

The advantages of the commander who undertakes a defensive campaign are that he operates in his own country, he can make use of a smaller force, he receives assistance from his fortified places, he undertakes a less difficult task, and has a greater chance of outside assistance. The advantages of operating in one's own country have already been set forth in the observation made by Frederick the Great. The population being friendly the information derived from them is certain to be intentionally truthful and may be exceedingly valuable. This attitude of the people and the presumably more accurate knowledge of the topography of the country makes the operations of the army less liable to miscarry, for even in an unknown region faithful guides can always be secured. The commander is able to select the positions where he proposes to resist invasion long in advance and to intrench them by employing the civil population or his least trained troops.

In the minor operations of outpost, patrolling, and advance guard movements, his knowledge of the country gives him a great advantage and enables him to resort to ambuscades and surprises. The defense requires less troops than the offense because it has no long lines of communications in a hostile country which, as has already been shown, absorb a large fraction of the army. The operations of the defender are aided by the permanent or temporary fortifications which have been constructed on or within the radius of influence of the principal lines of invasion, which he may use as temporary bases, pivots of maneuver, or simply as obstacles to delay the advance of the invader.

The defender also has a moral advantage in the fact that he only sets for himself the task of preserving his

fighting force or the decisive territorial objective, while the invader sets for himself the task of destroying the one and capturing the other. The invader must therefore bring the defender to decisive battle, force the defender into such a position that he can only escape by fighting a decisive battle in which the chances are all against him, or capture a territorial objective which will serve to impress upon the defender the hopelessness of continued resistance. So long as the defender can avoid these decisive conditions, he is unconquered and can still hope for ultimate success.

In 1812 the Russians preserved their army by refusing to fight a battle near the frontier and compelled Napoleon to invade their country. When in their estimation the reduction of his fighting force at the front gave them a reasonable chance of success, they accepted a defensive battle. Unsuccessful, however, in this battle of *Borodino*, they continued their retreat and abandoned the ancient capital of Moscow, which Napoleon had considered a decisive objective. Napoleon was unable to invade the country beyond Moscow, because of the reduction of his fighting force and the exhaustion of his means of transportation. His failure to achieve success raised a spirit of insurrection in his rear and he was finally compelled to begin the retreat which the combined action of the Russians and the early winter rendered disastrous.

A similar disastrous campaign was that of Massena in Spain and Portugal in 1810. The French army in Spain numbered 400,000 men, yet he reached the lines of Torres Vedras near Lisbon via Salamanca too weak to even attempt their capture from Wellington's army of 35,000. He was afterwards compelled to retreat on account of the hostility of the inhabitants on the lines of communication which rendered the supply of the army an impossibility.

The obligation of making the first movement which the invader assumes often leads him into hasty and ill-considered operations from which the defender is protected. Thus the impatience of the public and the press led the Union military authorities in 1861 to undertake, against their better judgment, the ill-fated campaign of Bull Run. It led the French army commanders to undertake hasty offensive operations in 1870, from the effects of which they were unable to recover. Had the Spanish fleet not taken refuge in the harbor of Santiago, it is not at all improbable that another *Bull Run* in the vicinity of Havana might have been forced on the American military authorities.

There is among the great nations of the world a strong feeling averse to any considerable increase in the power of any one individual state. This and the natural tendency of civilized man to pity the weak, raise at once in other nations a sympathy for the defender, which may ultimately lead to active intervention. The assistance rendered by France to our colonies during the Revolution, the alliance against the growing power of Napoleon, the intervention of the allies in the Crimean war, the intervention of the British in the Russo-Turkish war were all to prevent the military success of the stronger nation from unduly increasing its power. In the war of 1914, the desire to curb the military power of Germany was very evident.

The disadvantage of the defensive in strategy lies in the fact that the commander must assume a waiting or hesitating policy. He relies on defeating his adversary by decisive tactical battles, by exhausting his powers by skillful retreat or by taking refuge in fortified places, and by invoking the aid of foreign powers. Tactical success in a single battle or in a series of battles will rarely check a determined antagonist, as was shown in the operations of

the armies of the Potomac and of *Northern Virginia* in the civil war, yet on the other hand the decisive battle of Waterloo did terminate the offensive power of Napoleon and the battle of Saratoga ended British invasion from Canada during our Revolutionary war.

The Russian campaign of 1812, and the Peninsula campaign of 1810, show how success may be attained under exceptional circumstances through the exhaustion of the invader.

As a rule, the defensive persistently adhered to must lead to ultimate failure; it is only by the use of the defensive for the purpose of husbanding a weaker force until an opportunity comes to assume the offensive that ultimate success is secured.

Defense of Rivers.—The rivers of a country that intersect the lines of invasion are the most common barriers upon which the defensive army is assembled to await and dispute the advance of an invader. The defense of a river may be passive or active and should be of a nature to meet the three methods utilized by the invader to secure a passage, by force, by surprise and by stratagem. A passive defense contemplates only the strengthening of the natural barrier by means of an armed force so that the enemy cannot safely advance beyond it. The first step in the defense is the destruction of all permanent means of crossing in the shape of bridges and ferries. Strategically to resist an attempt of the invader to secure the passage by force, a defender need only concentrate and intrench in the vicinity of the point of crossing as large a force as possible.

At *Fredericksburg, Virginia*, where *Lee* successfully resisted the attempt of Burnside to effect a crossing, the former was enabled to concentrate his whole army at that point, because of the strategic errors made by the latter.

Burnside took command to the Army of the Potomac at Warrenton, Virginia, November 9, 1862, and at once made his plan to cross the Rappahannock by surprise at Falmouth, opposite Fredericksburg. The plan would under ordinary circumstances have been a good one, for of *Lee's* two army corps, one was at Culpeper and the other was in the Shenandoah valley. Burnside's army, however, had no pontoon train or other means of crossing the river, and had he investigated the fact he would have found that the only available train was on the upper Potomac at or near Harpers Ferry. It was impossible to have this at Fredericksburg before November 27. Notwithstanding this, Burnside began to concentrate his army at the point of crossing on November 17, and thus exposed his entire plan to his able adversary and gave him time to defeat it. When Burnside finally did cross on December 11, his entire force of 117,000 men was not sufficient to dislodge *Lee's* army from its intrenched position on the heights overlooking the river, although that army numbered but 60,000 men.

The attempts of the British to cross the Tugela in South Africa by force arose from the following circumstances. At the outbreak of the war about 25,000 Boer forces operated by converging lines on Ladysmith, Natal, an important town, military station and railway junction on the Durban-Johannesburg railway. The British force in Natal, about half the strength of the Boers, after fighting several unimportant engagements retreated, and about 7000 men under White took refuge in Ladysmith and were there invested by the Boers. To protect the investing force from the attacks of any relieving force which might come from Durban, the Boers organized a covering force and posted it along the Tugela river about twelve miles south of Ladysmith. It was this covering

force which resisted three different attempts of Buller to dislodge it, so that he might relieve Ladysmith. The operations involved were entirely tactical and will not be considered here, the numbers alone being of strategic significance. In the first attempt or battle of *Colenso*, December 15, 1899, the covering force under *Joubert* numbered 12,000 men and the relieving force under Buller, 19,000; in the second attempt January 10-27, terminating in the battle of *Spion Kop*, the covering force numbered 18,000, the relieving force 25,000; in the third attempt February 4-7, known as the battle of *Vaal Kranz*, the numbers were as before. A fourth attempt made February 17-27, in which occurred the battle of *Pieters Hill*, was finally successful.

The operations on the Kimberley line were somewhat similar to the operations about Ladysmith; the covering force was under *Cronje* and the relieving force under Methuen. *Cronje* was at first posted at *Belmont* about sixty miles south of Kimberley with about 3000 men, and on November 23 was attacked and defeated by Methuen with 6000 men. He retreated along the railway a short distance to *Graspan* or *Enslin*, where he met a second defeat November 24-25 and retired to the Modder river, twenty miles south of Kimberley, where he hastily took up a position on both banks. Both generals had been reinforced in the meantime, *Cronje* had a force of 8000 and Methuen 8500. Methuen attacked the position on the *Modder* on November 27 and though the battle was indecisive, the British succeeded in getting a foot-hold on the north bank. The Boers retired to a position on a ridge of hills at *Magersfontein* nearer Kimberley. Here *Cronje* intrenched his position, which he occupied with about 8000 men. Methuen attacked him on December 9 with 13,000 men, but was defeated and was compelled to retire

behind the river, intrench himself and wait for reinforcements; *Cronje* was now strongly reinforced, but remained on the defensive until finally dislodged by Roberts' turning movement.

It is a much more difficult task to defend a river against an attempt to effect a passage by surprise or stratagem; it may be said to be impossible except under exceptionally favorable conditions. The river must be very wide so that it will require a considerable time to construct the bridges and cross the troops; it must have good roads parallel to the river but beyond view and cannon range of its further bank, along which troops can be rapidly concentrated; there must also be a good position in rear to which the army may retire, in case the defense fails. The army may be then divided into groups of divisions or army corps, each charged with the defense of a certain part of the river. The group headquarters should be connected by telegraph for rapid transmission of information and orders. The groups would be encamped on the parallel roads at the intersection of the cross roads, and would have pickets along the river bank and patrols on the further side. Further to the rear would be the strategic reserve to reinforce the cordon or cover its retreat.

Ordinarily it is deemed better to hold the army in a concentrated position in some central position to move against the invader as soon as possible after he has begun his crossing. The stream itself is watched by cavalry patrols, who retard the enemy's movements and give warning of them. Sometimes, as at Fredericksburg, this enables the defender to reach the point of crossing before the invader is able to complete his movement.

The active defense of a river is based on the supposition that a general will ordinarily think more of his communications than he will of his line of operations. If therefore the

defender can threaten the communications of the invader, the latter will temporarily at least give up his idea of crossing the river. In order to carry out this scheme of defense, the defender should have possession of one or more permanent bridge-heads covering good bridges, by means of which he can quickly transfer his force in safety from one side of the river to the other. However, permanent bridgeheads are unnecessary if the defender is a successful general whose movements are much to be feared. It was by crossing the Rappahannock and boldly advancing into Maryland and Pennsylvania that *Lee* prevented Hooker from again crossing the Rappahannock after the battle of *Chancellorsville*.

In the third campaign made by the Austrians for the relief of Mantua, Italy, Napoleon resorted to active defense to relieve himself of a force which was threatening to cross the Adige. The Austrian relieving army was moving forward in two columns, the first of 15,000 men down the valley of the Adige river from Trent, and the second of 28,000 men from the Piave on Verona. Napoleon's covering army numbered only 33,000 men, of whom 10,000 were defending the Adige valley in the vicinity of Trent while he himself with 18,000 was attempting to retard the second Austrian column in the vicinity of Vicenza; the remaining troops were held as a strategic reserve. The enemy's numerical superiority was, however, too great for successful opposition and both wings of his army had to fall back; the first retreated to the plateau of Rivoli on the upper Adige, and the second retreated to the vicinity of Verona.

Unless one of the Austrian columns could be forced to retire, Napoleon himself would be compelled to retreat and then fight the united Austrian army. Under these circumstances he strengthened Verona with his reserve,

and with the second column he marched down the Adige from Verona, crossed the river a dozen miles below, at Ronco, and after a three days' fight at *Arcole* succeeded in outflanking the second Austrian column and compelling it to retreat. This enabled him to combine his forces against the first Austrian column and defeat that also.

When the main river of a country is parallel to the line of invasion, as the Danube and Po, and only its tributaries are perpendicular to it, it offers better opportunities for defense than a river perpendicular to the line of invasion, unless the latter is an obstacle exceptionally strong, naturally and artificially, like the Rhine. An army posted behind one of the tributaries has one flank of its position protected by the main river if the bridges on this river have been destroyed, and has double lines of retreat if it controls a bridge over the main river in its rear. The enemy is compelled to attack in front or on the unsupported flank, in which case one or the other or both lines of retreat are available. If the defender retires to the other side of the main stream the invader will hardly dare to advance further and leave the defender on the flank of his communications. He must therefore also cross the main river to bring the defender to decisive battle. The defender may at once take a position on the side of the main stream opposite to the line of operations of the enemy, or may retreat there after first accepting battle elsewhere. It will be remembered that in Moltke's plan of operations for the defense of Berlin against an Austrian column moving through Saxony, he proposed that the defending army should, after making an effort to defend the mountain passes, retire behind the Elbe and from that position threaten the invader's communications. The numerous campaigns in the Danube and Po valleys

illustrate the use that may be made of such rivers in attack and defense.

The failure of the defense of a river is usually due to the fact that the defender puts too much faith in the strength of the obstruction and either attempts to guard too long a line, or entirely fails to guard some part of it. The river should be regarded not as an impassable obstacle, but merely as an obstruction to the invader's free movement.

Defense of Mountains.—The defense of a range of mountains is made up of two distinct operations, the defense of the passes and the defense of the outlets. On account of the rough character of mountain ranges, their innumerable ravines and chasms, cliffs and peaks, operations in them on a grand scale are utterly impossible. The attack and the defense of the passes are therefore the work of the advance guard in attack and small detachments of the defense. The object of the detachments in the passes is not to actually stop the invader, for that is impossible, but to delay him. To this operation the rough character of the country lends itself with great effect. With the assistance of field fortification, a mountain pass becomes the strongest possible field of operations for a small defensive force, the only danger to which the detachments are exposed is that of being cut off by turning movements. These must be guarded against by outposts and patrols connecting the principal detachments, and by reserves posted at the intersections of the valleys and ridges which are defended. In crossing a range of mountains the invading army is usually divided into several columns each utilizing a different pass. If the detachments can so retard the columns that they will not debouch from the range in the order planned by the invader they have fulfilled all the functions that can be expected of them.

The main defense must be in the open country in rear of the mountain range, and the object must be to destroy the columns in detail as they debouch from the passes. This requires a strong resisting force at the exit of each pass and a strong central reserve to be moved to the pass where the enemy first attempts to force back the retaining force. The central reserve must be in communication with each detaining force, and each force with its detachments in the mountains. Circumstances may occur where the defending army may make an active defense and destroy one or more of the columns in the mountains themselves.

In the first campaign of Napoleon in 1796, he was guarding the Apennines and the Maritime Alps of Italy against the combined Austrian and Sardinian armies. These mountains, which separate the valley of the Po from the Mediterranean coast, are parallel and so near to the coast that in many places the Corniche road running from Nice to Genoa follows the steep sides of the mountains. At the mouths of the valleys through which small streams flow from the mountains, and along the road from Savona to Genoa, the mountains recede slightly from the coast.

In 1796 there were four principal passes or rather roads winding over the range between Nice and Genoa. From Vintimiglia a road led to Coni; from Albenga a road led to Ceva; from Finale and Savona roads led to Cairo on the Bormida, from which place roads ran westward to Millesimo and Ceva, and eastward down the Bormida valley to Acqui and Alessandria; from Genoa a road led to Novi and Alessandria. Napoleon had a field force of about 40,000 men to hold the passes from Albenga eastward. He posted one force of 5000 in rear of the Albenga or Ormea Pass, his main body of 32,000 at a central position near Savona, and 3000 at Voltri on the road between

Savona and Genoa. The roads on the crest of the mountain were held by detachments; that on the crest of Montenotte opposite Savona numbered 1200 men and was protected by field works. In this position Napoleon was able to support or be supported by each of his detached divisions.

The Austrians had a force of 30,000 based upon the fortified depot of Alessandria, while the Sardinians held Ceva and Millesimo with a force of 10,000. The Austrians decided to assume the offensive, and cross the mountains and move on Savona in two columns; one of 8000 via the road leading to Genoa, thence along the sea-coast, and the other of 5000 over the mountains via Montenotte. The left wing of the Sardinians was to co-operate with the second Austrian column.

On the same day, the Austrian column from Genoa was checked by the detaining column at Voltri, and the other from Acqui by the detachments in the field works on Montenotte; this disclosed the Austrian plan of campaign. Although the first column might overcome the detaining force and threaten his communications, Napoleon decided to attack the second column and threaten the communications of the Austrians. He therefore moved his troops from Savona over the mountains, attacked and defeated the second column and drove it back towards Alessandria; this caused the first Austrian column to retreat back through Genoa as he had anticipated. This closed the defensive stage of the campaign.

As in the case of rivers, defensive operations may also be based on a range of mountains, parallel to the invader's line. In the theater of operations between the Appalachian system and the Mississippi river, the Cumberland and Walden range of mountains formed the eastern boundary of the field of operations in Kentucky and

Tennessee, while the Louisville-Nashville-Chattanooga railroad, which traversed these States, was the principal Union line of invasion. In rear of the mountains was the Chattanooga-Richmond railway, which afforded the means of transferring men and supplies from one pass to another. This range played an important part in the operations in Kentucky and Tennessee in 1862.

In May, 1862, *Morgan* with his mounted raiders debouched from the passes of the Cumberland mountains near Knoxville, and raided the railway near Cave City. Returning from this raid and reorganizing, he again debouched from the same passes early in July and during that month executed an extensive raid along the line of the railway and in eastern Kentucky. He destroyed numerous railway bridges and captured several important depots of supplies.

It was from Walden's range near Chattanooga that the Confederate general, *Forrest*, in the same month made his raid and captured the Union depot of supplies at Murfreesboro.

In the latter part of August, while the Union army of the Cumberland was encamped on the line of McMinnville-Huntsville, two Confederate armies emerged from these mountains to operate against the communications and base of the Union army. *Bragg's Army of Tennessee* debouched east of McMinnville, and *Kirby Smith's Army of Kentucky* near Knoxville. These operations compelled Buell, who commanded the Army of the Cumberland, to retreat to the Ohio river. The Army of the Cumberland did not again reach the line of McMinnville-Huntsville thus abandoned until July 1, 1863, nearly a year later.

Diversion.—A diversion in defensive strategy is any operation made by a detachment of the main army for the

purpose of diverting the attention of the invader, or some of the forces, from the main objective. When the defender occupies a strong position which he can hold with a reduced force, or he is opposed by a hesitating adversary, a diversion may be extremely useful. It has already been shown how valuable to the Confederate operations in Virginia in 1862, was the diversion made by *Jackson* in the Shenandoah valley.

The commander of a detachment sent to make a diversion should keep in mind that the object of the movement is to produce as much confusion as possible in the plans of the adversary with as little loss as possible to himself. *Jackson's* diversion was carried out on these lines; he attacked only detachments much weaker than his own and took no risk of becoming involved in operations with superior forces which might materially affect the fighting strength or the morale of his force. He realized that the decisive tactical field for the employment of his corps was on the battle-fields near Richmond where the principal Union army was concentrated.

In 1864 *Lee* ordered another diversion in the same valley, but it was not carried out in the same manner. In June, when Grant's army was crossing the James river, one of *Lee's* three corps, *Ewell's* II corps, then under command of *Early*, was sent from the intrenched lines of Cold Harbor into the Shenandoah valley to operate against Hunter, who was advancing on Lynchburg; after disposing of Hunter, if he thought it advisable, *Early* was to make a diversion down the Shenandoah valley against the Union base and even its capital.

Having driven Hunter in retreat into the mountains of West Virginia, *Early* moved down the Shenandoah valley, crossed the Potomac at Shepherdstown, moved through Frederick, Maryland, where he fought an unimportant

battle and on July 11 was in front of the defenses of Washington.

This movement alarmed the authorities at the national capital and in the border States, and Grant sent to Washington from his own front the VI corps, and also the XIX corps which was on its way to join him from New Orleans. *Early* was unable to take the fortified capital, whose garrison was strengthened by the timely arrival of the VI corps, and retreated to the Shenandoah valley via Leesburg to Strasburg. He was pursued to Leesburg by the VI corps.

Assuming that this was merely a diversion, Grant directed that the VI and XIX corps be returned to him, and that *Early* be pursued by the Union troops of the Department of the Shenandoah and West Virginia. These troops numbered about 22,000 men and were under Hunter, who had escaped through West Virginia and had returned to the vicinity of Harpers Ferry with his command.

As soon as the VI corps returned to Washington, *Early* assumed the offensive against the scattered Union troops in his vicinity and decisively defeated a small force under Crook at *Kernstown*, July 24, and followed him to the Potomac river. From this point he sent his cavalry force to raid the States of Maryland and Pennsylvania. In these raids Chambersburg, Pa., was captured and burned.

These operations so alarmed the Northern States that at the request of the authorities, Grant directed not only the VI and the XIX corps to act against *Early*, but also sent two of the three divisions of his cavalry corps to Washington. These troops with Hunter's command became the Army of the Shenandoah and Sheridan was assigned to supreme command. This army was organized and assumed the offensive in the Shenandoah valley in the first days of August.

The success which had attended *Early's* movements until this time led both *Lee* and *Early* to convert the diversion into a serious campaign. For this purpose *Kershaw's* division was sent to *Early* from *Longstreet's* corps, but even with these troops *Early* had but 20,000 troops to operate against *Sheridan*, who had a field force of 43,000 men and a reserve of 13,000 on his lines of communication. The resulting campaign was, as might have been expected, disastrous to the morale as well as to the strength of the Confederate forces engaged.

Had *Early* retired up the valley without offering serious opposition to *Sheridan*, he would have accomplished all he originally set out to do, and could have returned to Richmond with a force whose morale was improved and whose strength was unimpaired. He might thus have reinforced *Lee* while *Grant* was still deprived of the assistance of *Sheridan's* two cavalry divisions, and the VI and XIX corps. The resulting situation would have been similar to that in August, 1862; one Union army would have been south of Richmond, and the other in the Shenandoah valley, with the united Confederate army in its intrenched capital between them.



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